

SEQUENCE LISTING

<110> Altmann, Scott W
Wang, Luquan
Graziano, Michael
Murgolo, Nick

Express Mail Label No. EV 334450917 US
Date of Deposit December 16, 2003

<120> NPC1L1 (NPC3) AND METHODS OF USE THEREOF

<130> JB01603-K3-US

<140>

<141> 2003-12-16

<150> 60/397,442

<151> 2002-07-19

<150> 10/621,758

<151> 2003-07-17

<150> 10/646,301

<151> 2003-08-22

<150> 10/663,208

<151> 2003-09-16

<160> 51

<170> PatentIn version 3.1

<210> 1

<211> 3996

<212> DNA

<213> Rattus sp.

<220>

<221> CDS

<222> (1) .. (3996)

<223>

<400> 1

atg gca gct gcc tgg ctg gga tgg ctg ctc tgg gcc ctg ctc ctg agc	48
Met Ala Ala Ala Trp Leu Gly Trp Leu Leu Trp Ala Leu Leu Leu Ser	
1 5 10 15	
gcg gcc cag ggt gag cta tac aca ccc aaa cac gaa gct ggg gtc tgc	96
Ala Ala Gln Gly Glu Leu Tyr Thr Pro Lys His Glu Ala Gly Val Cys	
20 25 30	
acc ttt tac gaa gag tgc ggg aaa aac cca gag ctc tct gga ggc ctc	144
Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu	
35 40 45	
acg tca cta tcc aat gta tcc tgc ctg tct aac acc ccg gcc cgc cac	192
Thr Ser Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg His	
50 55 60	
gtc acg ggt gaa cac ctg gct ctt ctc cag cgc atc tgt ccc cgc ctg	240
Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu	
65 70 75 80	
tac aac ggc ccc aat acc act ttt gcc tgt tgc tct acc aag cag ctg	288
Tyr Asn Gly Pro Asn Thr Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu	
85 90 95	
ctg tcc tta gaa agc agc atg tcc atc acc aag gcc ctt ctc acg cgc	336
Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg	
100 105 110	
tgc ccg gcc tgc tct gac aat ttt gtg agc tta cac tgc cac aac act	384
Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr	
115 120 125	
tgc agc cct gac cag agc ctc ttc atc aac gtc acc cgg gtg gtt gag	432
Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Glu	
130 135 140	
cgg ggc gct gga gag cct cct gcc gtg gtg gcc tat gag gcc ttt tat	480
Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr	
145 150 155 160	
cag cgc agc ttt gct gag aag gcc tat gag tcc tgc agc cag gtg cgc	528
Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg	
165 170 175	
atc cct gcg gcc gct tcc ttg gcc gtg ggc agc atg tgt gga gtg tat	576
Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr	
180 185 190	
ggc tcc gcc ctc tgc aat gct cag cgc tgg ctc aac ttc caa gga gac	624
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp	

195	200	205	
aca ggc aat ggc ctg gct ccg ctg gat atc acc ttc cac ctc ttg gag Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu 210 215 220			672
cct ggc cag gcc cta ccg gat ggg atc cag cca ctg aat ggg aag atc Pro Gly Gln Ala Leu Pro Asp Gly Ile Gln Pro Leu Asn Gly Lys Ile 225 230 235 240			720
gca ccc tgc aac gag tct cag ggt gat gac tca gca gtc tgc tcc tgc Ala Pro Cys Asn Glu Ser Gln Gly Asp Asp Ser Ala Val Cys Ser Cys 245 250 255			768
cag gac tgt gcg gcg tcc tgc cct gtc atc cct ccg ccc gag gcc ttg Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Glu Ala Leu 260 265 270			816
cgc cct tcc ttc tac atg ggt cgc atg cca ggc tgg ctg gcc ctc atc Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile 275 280 285			864
atc atc ttc act gct gtc ttt gtg ttg ctc tct gca gtc ctt gtg cgt Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Ala Val Leu Val Arg 290 295 300			912
ctc cga gtg gtt tcc aac agg aac aag aac aag gca gaa ggc ccc cag Leu Arg Val Val Ser Asn Arg Asn Lys Asn Lys Ala Glu Gly Pro Gln 305 310 315 320			960
gaa gcc ccc aaa ctc cct cat aag cac aaa ctc tca ccc cat acc atc Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile 325 330 335			1008
ctg ggc cgg ttc ttc cag aac tgg ggc aca agg gtg gcc tcg tgg cca Leu Gly Arg Phe Phe Gln Asn Trp Gly Thr Arg Val Ala Ser Trp Pro 340 345 350			1056
ctc acc gtc tta gca ctg tcc ttc atc gtt gtg ata gcc tta gca gca Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ala Ala 355 360 365			1104
ggc ctg acc ttt att gaa ctc acc aca gac cct gtg gaa ctg tgg tcg Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser 370 375 380			1152
gcc ccc aag agc cag gcc cgg aaa gag aag tct ttc cat gat gag cat Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His 385 390 395 400			1200
ttc ggc ccc ttc ttt cga acc aac cag att ttc gtg aca gct cgg aac Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Arg Asn 405 410 415			1248
agg tcc agc tac aag tac gac tcc cta ctg cta ggg tcc aag aac ttc Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Gly Ser Lys Asn Phe 420 425 430			1296
agt ggg atc ctg tcc ctg gac ttc ctg ctg gag ctg ctg gag ctt cag Ser Gly Ile Leu Ser Leu Asp Phe Leu Leu Glu Leu Leu Glu Leu Gln 435 440 445			1344

gag agg ctt cga cac ctg caa gtg tgg tcc cct gag gca gag cgc aac Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Glu Arg Asn 450 455 460	1392
atc tcc ctc cag gac atc tgc tat gcc ccc ctc aac cca tat aac acc Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Tyr Asn Thr 465 470 475 480	1440
agc ctc tcc gac tgc tgt gtc aac agc ctc ctt cag tac ttc cag aac Ser Leu Ser Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn 485 490 495	1488
aac cgc acc ctc ctg atg ctc acg gcc aac cag act ctg aat ggc cag Asn Arg Thr Leu Leu Met Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln 500 505 510	1536
acc tcc ctg gtg gac tgg aag gac cat ttc ctc tac tgt gca aat gcc Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala 515 520 525	1584
cct ctc acg ttc aaa gat ggc acg tct ctg gcc ctg agc tgc atg gct Pro Leu Thr Phe Lys Asp Gly Thr Ser Leu Ala Leu Ser Cys Met Ala 530 535 540	1632
gac tac ggg gct cct gtc ttc ccc ttc ctt gct gtt ggg gga tac caa Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln 545 550 555 560	1680
ggc acg gac tat tcc gag gca gaa gcg ctg atc ata acc ttc tct ctc Gly Thr Asp Tyr Ser Glu Ala Glu Ala Leu Ile Ile Thr Phe Ser Leu 565 570 575	1728
aat aac tac ccc gct gat gat ccc cgc atg gcc cag gcc aag ctc tgg Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala Gln Ala Lys Leu Trp 580 585 590	1776
gag gag gct ttc ttg aag gaa atg gaa tcc ttc cag agg aac aca agt Glu Glu Ala Phe Leu Lys Glu Met Glu Ser Phe Gln Arg Asn Thr Ser 595 600 605	1824
gac aag ttc cag gtt gcg ttc tca gct gag cgc tct ctg gag gat gag Asp Lys Phe Gln Val Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu 610 615 620	1872
atc aac cgc acc acc atc cag gac ctg cct gtc ttt gcc gtc agc tac Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Val Ser Tyr 625 630 635 640	1920
att atc gtc ttc ctg tac atc tcc ctg gcc ctg ggc agc tac tcc aga Ile Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg 645 650 655	1968
tgc agc cga gta gcg gtg gag tcc aag gct act ctg ggc cta ggt ggg Cys Ser Arg Val Ala Val Glu Ser Lys Ala Thr Leu Gly Leu Gly Gly 660 665 670	2016
gtg att gtt gtg ctg gga gca gtt ctg gct gcc atg ggc ttc tac tcc Val Ile Val Val Leu Gly Ala Val Leu Ala Ala Met Gly Phe Tyr Ser 675 680 685	2064

tac ctg ggt gtc ccc tct tct ctg gtt atc atc caa gtg gta cct ttc Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe 690 695 700	2112
ctg gtg cta gct gtg gga gct gac aac atc ttc atc ttt gtt ctt gag Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu 705 710 715 720	2160
tac cag agg cta cct agg atg cct ggg gaa cag cga gag gct cac att Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile 725 730 735	2208
ggc cgc acc ctg ggc agt gtg gcc ccc agc atg ctg ctg tgc agc ctc Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu 740 745 750	2256
tct gag gcc atc tgc ttc ttt cta ggg gcc ctg acc ccc atg cca gct Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala 755 760 765	2304
gtg agg acc ttc gcc ttg acc tct ggc tta gca att atc ctc gac ttc Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Leu Asp Phe 770 775 780	2352
ctg ctc cag atg act gcc ttt gtg gcc ctg ctc tcc ctg gat agc aag Leu Leu Gln Met Thr Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys 785 790 795 800	2400
agg cag gag gcc tct cgc ccg gat gtc tta tgc tgc ttt tca acc cgg Arg Gln Glu Ala Ser Arg Pro Asp Val Leu Cys Cys Phe Ser Thr Arg 805 810 815	2448
aag ctg ccc cca cct aaa gaa aaa gaa ggc ctc tta ctc cgc ttc ttc Lys Leu Pro Pro Pro Lys Glu Lys Glu Gly Leu Leu Leu Arg Phe Phe 820 825 830	2496
cgc aag ata tac gct cct ttc ctg ctg cac aga ttc atc cgc cct gtt Arg Lys Ile Tyr Ala Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val 835 840 845	2544
gtg atg ctg ctg ttt ctg acc ctg ttt gga gca aat ctc tac tta atg Val Met Leu Leu Phe Leu Thr Leu Phe Gly Ala Asn Leu Tyr Leu Met 850 855 860	2592
tgc aac atc aac gtg ggg cta gac cag gag ctg gct ctg ccc aag gac Cys Asn Ile Asn Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp 865 870 875 880	2640
tcg tac ttg ata gac tac ttc ctc ttt ctg aac cga tac ctt gaa gtg Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val 885 890 895	2688
ggg cct cca gtg tac ttt gtc acc acc tcg ggc ttc aac ttc tcc agc Gly Pro Pro Val Tyr Phe Val Thr Thr Ser Gly Phe Asn Phe Ser Ser 900 905 910	2736
gag gca ggc atg aac gcc act tgc tct agc gca ggc tgt aag agc ttc Glu Ala Gly Met Asn Ala Thr Cys Ser Ser Ala Gly Cys Lys Ser Phe 915 920 925	2784
tcc cta acc cag aaa atc cag tat gcc agt gaa ttc cct gac cag tct	2832

Ser	Leu	Thr	Gln	Lys	Ile	Gln	Tyr	Ala	Ser	Glu	Phe	Pro	Asp	Gln	Ser		
930						935					940						
tac	gtg	gct	att	gct	gca	tcc	tcc	tgg	gta	gat	gac	ttc	atc	gac	tgg		2880
Tyr	Val	Ala	Ile	Ala	Ala	Ser	Ser	Trp	Val	Asp	Asp	Phe	Ile	Asp	Trp		
945					950					955					960		
ctg	acc	ccg	tcc	tcc	tcc	tgc	tgt	cgc	ctt	tat	ata	cgt	ggc	ccc	cat		2928
Leu	Thr	Pro	Ser	Ser	Ser	Cys	Cys	Arg	Leu	Tyr	Ile	Arg	Gly	Pro	His		
				965					970					975			
aag	gat	gag	ttc	tgt	ccc	tca	acg	gat	act	tcc	ttc	aac	tgc	tta	aaa		2976
Lys	Asp	Glu	Phe	Cys	Pro	Ser	Thr	Asp	Thr	Ser	Phe	Asn	Cys	Leu	Lys		
			980					985					990				
aac	tgc	atg	aac	cgc	act	ctg	ggc	cct	gtg	agg	ccc	aca	gcg	gaa	cag		3024
Asn	Cys	Met	Asn	Arg	Thr	Leu	Gly	Pro	Val	Arg	Pro	Thr	Ala	Glu	Gln		
		995					1000					1005					
ttt	cat	aag	tac	ctg	ccc	tgg	ttc	ctg	aat	gat	ccg	ccc	aat	atc			3069
Phe	His	Lys	Tyr	Leu	Pro	Trp	Phe	Leu	Asn	Asp	Pro	Pro	Asn	Ile			
	1010					1015					1020						
aga	tgt	ccc	aaa	ggg	ggc	cta	gca	gcg	tat	aga	acg	tct	gtg	aat			3114
Arg	Cys	Pro	Lys	Gly	Gly	Leu	Ala	Ala	Tyr	Arg	Thr	Ser	Val	Asn			
	1025					1030					1035						
ttg	agc	tca	gat	ggc	cag	gtt	ata	gcc	tcc	cag	ttc	atg	gcc	tac			3159
Leu	Ser	Ser	Asp	Gly	Gln	Val	Ile	Ala	Ser	Gln	Phe	Met	Ala	Tyr			
	1040					1045					1050						
cac	aag	ccc	tta	agg	aac	tca	cag	gac	ttc	aca	gaa	gct	ctc	cgg			3204
His	Lys	Pro	Leu	Arg	Asn	Ser	Gln	Asp	Phe	Thr	Glu	Ala	Leu	Arg			
	1055					1060					1065						
gcg	tcc	cgg	ttg	cta	gca	gcc	aac	atc	aca	gct	gac	cta	cgg	aag			3249
Ala	Ser	Arg	Leu	Leu	Ala	Ala	Asn	Ile	Thr	Ala	Asp	Leu	Arg	Lys			
	1070					1075					1080						
gtg	cct	ggg	aca	gat	cca	aac	ttt	gag	gtc	ttc	cct	tac	acg	atc			3294
Val	Pro	Gly	Thr	Asp	Pro	Asn	Phe	Glu	Val	Phe	Pro	Tyr	Thr	Ile			
	1085					1090					1095						
tcc	aac	gtg	ttc	tac	cag	caa	tac	ctg	acg	gtc	ctt	cct	gag	gga			3339
Ser	Asn	Val	Phe	Tyr	Gln	Gln	Tyr	Leu	Thr	Val	Leu	Pro	Glu	Gly			
	1100					1105					1110						
atc	ttc	acc	ctt	gct	ctt	tgc	ttt	gtg	ccc	acc	ttt	gtt	gtc	tgc			3384
Ile	Phe	Thr	Leu	Ala	Leu	Cys	Phe	Val	Pro	Thr	Phe	Val	Val	Cys			
	1115					1120					1125						
tac	ctc	cta	ctg	ggc	ctg	gac	atg	tgc	tca	ggg	atc	ctc	aac	cta			3429
Tyr	Leu	Leu	Leu	Gly	Leu	Asp	Met	Cys	Ser	Gly	Ile	Leu	Asn	Leu			
	1130					1135					1140						
ctc	tcc	atc	att	atg	att	ctc	gtg	gac	acc	att	ggc	ctc	atg	gct			3474
Leu	Ser	Ile	Ile	Met	Ile	Leu	Val	Asp	Thr	Ile	Gly	Leu	Met	Ala			
	1145					1150					1155						
gtg	tgg	ggc	atc	agc	tat	aat	gcg	gta	tcc	ctc	atc	aac	ctt	gtc			3519
Val	Trp	Gly	Ile	Ser	Tyr	Asn	Ala	Val	Ser	Leu	Ile	Asn	Leu	Val			

1160	1165	1170	
acg gca gtg ggc atg tct gtg	gag ttt gtg tcc cac	atc act cgg	3564
Thr Ala Val Gly Met Ser Val	Glu Phe Val Ser His	Ile Thr Arg	
1175	1180	1185	
tcc ttt gct gta agc acc aag	cct acc cgg ctg gag	agg gct aaa	3609
Ser Phe Ala Val Ser Thr Lys	Pro Thr Arg Leu Glu	Arg Ala Lys	
1190	1195	1200	
gat gct act gtc ttc atg ggc	agt gcg gtg ttt gct	gga gtg gcc	3654
Asp Ala Thr Val Phe Met Gly	Ser Ala Val Phe Ala	Gly Val Ala	
1205	1210	1215	
atg acc aac ttc cca ggc atc	ctc atc ttg ggc ttt	gcc caa gcc	3699
Met Thr Asn Phe Pro Gly Ile	Leu Ile Leu Gly Phe	Ala Gln Ala	
1220	1225	1230	
cag ctt att cag atc ttc ttc	ttc cgc ctc aac ctt	ctg atc acc	3744
Gln Leu Ile Gln Ile Phe Phe	Phe Arg Leu Asn Leu	Leu Ile Thr	
1235	1240	1245	
ttg ctg ggt ctg ctg cat ggc	ctg gtc ttc ctg ccg	gtt gtc ctc	3789
Leu Leu Gly Leu Leu His Gly	Leu Val Phe Leu Pro	Val Val Leu	
1250	1255	1260	
agc tat ctg gga cca gat gtt	aac caa gct ctg gta	cag gag gag	3834
Ser Tyr Leu Gly Pro Asp Val	Asn Gln Ala Leu Val	Gln Glu Glu	
1265	1270	1275	
aaa cta gcc agc gag gca gca	gtg gcc cca gag cct	tct tgc cca	3879
Lys Leu Ala Ser Glu Ala Ala	Val Ala Pro Glu Pro	Ser Cys Pro	
1280	1285	1290	
cag tac ccc tcc cct gct gat	gcg gat gcc aat gtt	aac tac ggc	3924
Gln Tyr Pro Ser Pro Ala Asp	Ala Asp Ala Asn Val	Asn Tyr Gly	
1295	1300	1305	
ttt gcc cca gaa ctt gcc cac	gga gct aat gct gct	aga agc tct	3969
Phe Ala Pro Glu Leu Ala His	Gly Ala Asn Ala Ala	Arg Ser Ser	
1310	1315	1320	
ttg ccc aaa agt gac caa aag	ttc taa		3996
Leu Pro Lys Ser Asp Gln Lys	Phe		
1325	1330		

<210> 2

<211> 1331

<212> PRT

<213> Rattus sp.

<400> 2

Met	Ala	Ala	Ala	Trp	Leu	Gly	Trp	Leu	Leu	Trp	Ala	Leu	Leu	Leu	Ser
1				5				10						15	

Ala Ala Gln Gly Glu Leu Tyr Thr Pro Lys His Glu Ala Gly Val Cys
 20 25 30
 Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu
 35 40 45
 Thr Ser Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg His
 50 55 60
 Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu
 65 70 75 80
 Tyr Asn Gly Pro Asn Thr Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu
 85 90 95
 Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg
 100 105 110
 Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr
 115 120 125
 Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Glu
 130 135 140
 Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
 145 150 155 160
 Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg
 165 170 175
 Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
 180 185 190
 Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
 195 200 205
 Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
 210 215 220
 Pro Gly Gln Ala Leu Pro Asp Gly Ile Gln Pro Leu Asn Gly Lys Ile
 225 230 235 240
 Ala Pro Cys Asn Glu Ser Gln Gly Asp Asp Ser Ala Val Cys Ser Cys
 245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Glu Ala Leu
 260 265 270

Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile
 275 280 285

Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Ala Val Leu Val Arg
 290 295 300

Leu Arg Val Val Ser Asn Arg Asn Lys Asn Lys Ala Glu Gly Pro Gln
 305 310 315 320

Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile
 325 330 335

Leu Gly Arg Phe Phe Gln Asn Trp Gly Thr Arg Val Ala Ser Trp Pro
 340 345 350

Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ala Ala
 355 360 365

Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
 370 375 380

Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His
 385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Arg Asn
 405 410 415

Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Ser Lys Asn Phe
 420 425 430

Ser Gly Ile Leu Ser Leu Asp Phe Leu Leu Glu Leu Leu Glu Leu Gln
 435 440 445

Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Glu Arg Asn
 450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Tyr Asn Thr
 465 470 475 480

Ser Leu Ser Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn
 485 490 495

Asn Arg Thr Leu Leu Met Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln
 500 505 510

Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
 515 520 525

Pro Leu Thr Phe Lys Asp Gly Thr Ser Leu Ala Leu Ser Cys Met Ala
 530 535 540

Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln
 545 550 555 560

Gly Thr Asp Tyr Ser Glu Ala Glu Ala Leu Ile Ile Thr Phe Ser Leu
 565 570 575

Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala Gln Ala Lys Leu Trp
 580 585 590

Glu Glu Ala Phe Leu Lys Glu Met Glu Ser Phe Gln Arg Asn Thr Ser
 595 600 605

Asp Lys Phe Gln Val Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu
 610 615 620

Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Val Ser Tyr
 625 630 635 640

Ile Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg
 645 650 655

Cys Ser Arg Val Ala Val Glu Ser Lys Ala Thr Leu Gly Leu Gly Gly
 660 665 670

Val Ile Val Val Leu Gly Ala Val Leu Ala Ala Met Gly Phe Tyr Ser
 675 680 685

Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
 690 695 700

Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
 705 710 715 720

Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile
 725 730 735

Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu

740					745					750					
Ser	Glu	Ala	Ile	Cys	Phe	Phe	Leu	Gly	Ala	Leu	Thr	Pro	Met	Pro	Ala
		755					760					765			
Val	Arg	Thr	Phe	Ala	Leu	Thr	Ser	Gly	Leu	Ala	Ile	Ile	Leu	Asp	Phe
	770					775					780				
Leu	Leu	Gln	Met	Thr	Ala	Phe	Val	Ala	Leu	Leu	Ser	Leu	Asp	Ser	Lys
785					790					795					800
Arg	Gln	Glu	Ala	Ser	Arg	Pro	Asp	Val	Leu	Cys	Cys	Phe	Ser	Thr	Arg
				805					810					815	
Lys	Leu	Pro	Pro	Pro	Lys	Glu	Lys	Glu	Gly	Leu	Leu	Leu	Arg	Phe	Phe
			820					825					830		
Arg	Lys	Ile	Tyr	Ala	Pro	Phe	Leu	Leu	His	Arg	Phe	Ile	Arg	Pro	Val
		835					840					845			
Val	Met	Leu	Leu	Phe	Leu	Thr	Leu	Phe	Gly	Ala	Asn	Leu	Tyr	Leu	Met
	850					855					860				
Cys	Asn	Ile	Asn	Val	Gly	Leu	Asp	Gln	Glu	Leu	Ala	Leu	Pro	Lys	Asp
865					870					875					880
Ser	Tyr	Leu	Ile	Asp	Tyr	Phe	Leu	Phe	Leu	Asn	Arg	Tyr	Leu	Glu	Val
				885					890					895	
Gly	Pro	Pro	Val	Tyr	Phe	Val	Thr	Thr	Ser	Gly	Phe	Asn	Phe	Ser	Ser
			900					905					910		
Glu	Ala	Gly	Met	Asn	Ala	Thr	Cys	Ser	Ser	Ala	Gly	Cys	Lys	Ser	Phe
		915					920					925			
Ser	Leu	Thr	Gln	Lys	Ile	Gln	Tyr	Ala	Ser	Glu	Phe	Pro	Asp	Gln	Ser
	930					935					940				
Tyr	Val	Ala	Ile	Ala	Ala	Ser	Ser	Trp	Val	Asp	Asp	Phe	Ile	Asp	Trp
945					950					955					960
Leu	Thr	Pro	Ser	Ser	Ser	Cys	Cys	Arg	Leu	Tyr	Ile	Arg	Gly	Pro	His
				965					970					975	
Lys	Asp	Glu	Phe	Cys	Pro	Ser	Thr	Asp	Thr	Ser	Phe	Asn	Cys	Leu	Lys
			980					985					990		

Asn Cys Met Asn Arg Thr Leu Gly Pro Val Arg Pro Thr Ala Glu Gln
 995 1000 1005

Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Pro Pro Asn Ile
 1010 1015 1020

Arg Cys Pro Lys Gly Gly Leu Ala Ala Tyr Arg Thr Ser Val Asn
 1025 1030 1035

Leu Ser Ser Asp Gly Gln Val Ile Ala Ser Gln Phe Met Ala Tyr
 1040 1045 1050

His Lys Pro Leu Arg Asn Ser Gln Asp Phe Thr Glu Ala Leu Arg
 1055 1060 1065

Ala Ser Arg Leu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys
 1070 1075 1080

Val Pro Gly Thr Asp Pro Asn Phe Glu Val Phe Pro Tyr Thr Ile
 1085 1090 1095

Ser Asn Val Phe Tyr Gln Gln Tyr Leu Thr Val Leu Pro Glu Gly
 1100 1105 1110

Ile Phe Thr Leu Ala Leu Cys Phe Val Pro Thr Phe Val Val Cys
 1115 1120 1125

Tyr Leu Leu Leu Gly Leu Asp Met Cys Ser Gly Ile Leu Asn Leu
 1130 1135 1140

Leu Ser Ile Ile Met Ile Leu Val Asp Thr Ile Gly Leu Met Ala
 1145 1150 1155

Val Trp Gly Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val
 1160 1165 1170

Thr Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg
 1175 1180 1185

Ser Phe Ala Val Ser Thr Lys Pro Thr Arg Leu Glu Arg Ala Lys
 1190 1195 1200

Asp Ala Thr Val Phe Met Gly Ser Ala Val Phe Ala Gly Val Ala
 1205 1210 1215

Met Thr Asn Phe Pro Gly Ile Leu Ile Leu Gly Phe Ala Gln Ala
 1220 1225 1230

Gln Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr
 1235 1240 1245

Leu Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Val Leu
 1250 1255 1260

Ser Tyr Leu Gly Pro Asp Val Asn Gln Ala Leu Val Gln Glu Glu
 1265 1270 1275

Lys Leu Ala Ser Glu Ala Ala Val Ala Pro Glu Pro Ser Cys Pro
 1280 1285 1290

Gln Tyr Pro Ser Pro Ala Asp Ala Asp Ala Asn Val Asn Tyr Gly
 1295 1300 1305

Phe Ala Pro Glu Leu Ala His Gly Ala Asn Ala Ala Arg Ser Ser
 1310 1315 1320

Leu Pro Lys Ser Asp Gln Lys Phe
 1325 1330

<210> 3

<211> 3999

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(3999)

<223>

<400> 3

atg gcg gag gcc ggc ctg agg ggc tgg ctg ctg tgg gcc ctg ctc ctg 48
 Met Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu
 1 5 10 15

cgc ttg gcc cag agt gag cct tac aca acc atc cac cag cct ggc tac 96
 Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr
 20 25 30

tgc gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc	144
Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser	
35 40 45	
ctc atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc	192
Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg	
50 55 60	
aag atc aca ggt gat cac ctg atc cta tta cag aag atc tgc ccc cgc	240
Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg	
65 70 75 80	
ctc tac acc ggc ccc aac acc caa gcc tgc tgc tcc gcc aag cag ctg	288
Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu	
85 90 95	
gta tca ctg gaa gcg agt ctg tcg atc acc aag gcc ctc ctc acc cgc	336
Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg	
100 105 110	
tgc cca gcc tgc tct gac aat ttt gtg aac ctg cac tgc cac aac acg	384
Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr	
115 120 125	
tgc agc ccc aat cag agc ctc ttc atc aat gtg acc cgc gtg gcc cag	432
Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln	
130 135 140	
cta ggg gct gga caa ctc cca gct gtg gtg gcc tat gag gcc ttc tac	480
Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr	
145 150 155 160	
cag cat agc ttt gcc gag cag agc tat gac tcc tgc agc cgt gtg cgc	528
Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg	
165 170 175	
gtc cct gca gct gcc acg ctg gct gtg ggc acc atg tgt ggc gtg tat	576
Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr	
180 185 190	
ggc tct gcc ctt tgc aat gcc cag cgc tgg ctc aac ttc cag gga gac	624
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp	
195 200 205	
aca ggc aat ggt ctg gcc cca ctg gac atc acc ttc cac ctc ttg gag	672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu	
210 215 220	
cct ggc cag gcc gtg ggg agt ggg att cag cct ctg aat gag ggg gtt	720
Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val	
225 230 235 240	
gca cgt tgc aat gag tcc caa ggt gac gac gtg gcg acc tgc tcc tgc	768
Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys	
245 250 255	
caa gac tgt gct gca tcc tgt cct gcc ata gcc cgc ccc cag gcc ctc	816
Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu	
260 265 270	

gac tcc acc ttc tac ctg ggc cag atg ccg ggc agt ctg gtc ctc atc Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile 275 280 285	864
atc atc ctc tgc tct gtc ttc gct gtg gtc acc atc ctg ctt gtg gga Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly 290 295 300	912
ttc cgt gtg gcc ccc gcc agg gac aaa agc aag atg gtg gac ccc aag Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys 305 310 315 320	960
aag ggc acc agc ctc tct gac aag ctc agc ttc tcc acc cac acc ctc Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu 325 330 335	1008
ctt ggc cag ttc ttc cag ggc tgg ggc acg tgg gtg gct tcg tgg cct Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro 340 345 350	1056
ctg acc atc ttg gtg cta tct gtc atc ccg gtg gtg gcc ttg gca gcg Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala 355 360 365	1104
ggc ctg gtc ttt aca gaa ctc act acg gac ccc gtg gag ctg tgg tcg Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser 370 375 380	1152
gcc ccc aac agc caa gcc cgg agt gag aaa gct ttc cat gac cag cat Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His 385 390 395 400	1200
ttc ggc ccc ttc ttc cga acc aac cag gtg atc ctg acg gct cct aac Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn 405 410 415	1248
cgg tcc agc tac agg tat gac tct ctg ctg ctg ggg ccc aag aac ttc Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe 420 425 430	1296
agc gga atc ctg gac ctg gac ttg ctg ctg gag ctg cta gag ctg cag Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln 435 440 445	1344
gag agg ctg cgg cac ctc cag gta tgg tcg ccc gaa gca cag cgc aac Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn 450 455 460	1392
atc tcc ctg cag gac atc tgc tac gcc ccc ctc aat ccg gac aat acc Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr 465 470 475 480	1440
agt ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn 485 490 495	1488
aac cgc acg ctc ctg ctg ctc aca gcc aac cag aca ctg atg ggg cag Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln 500 505 510	1536
acc tcc caa gtc gac tgg aag gac cat ttt ctg tac tgt gcc aat gcc	1584

Thr	Ser	Gln	Val	Asp	Trp	Lys	Asp	His	Phe	Leu	Tyr	Cys	Ala	Asn	Ala		
		515					520					525					
ccg	ctc	acc	ttc	aag	gat	ggc	aca	gcc	ctg	gcc	ctg	agc	tgc	atg	gct	1632	
Pro	Leu	Thr	Phe	Lys	Asp	Gly	Thr	Ala	Leu	Ala	Leu	Ser	Cys	Met	Ala		
	530					535					540						
gac	tac	ggg	gcc	cct	gtc	ttc	ccc	ttc	ctt	gcc	att	ggg	ggg	tac	aaa	1680	
Asp	Tyr	Gly	Ala	Pro	Val	Phe	Pro	Phe	Leu	Ala	Ile	Gly	Gly	Tyr	Lys		
545					550					555					560		
gga	aag	gac	tat	tct	gag	gca	gag	gcc	ctg	atc	atg	acg	ttc	tcc	ctc	1728	
Gly	Lys	Asp	Tyr	Ser	Glu	Ala	Glu	Ala	Leu	Ile	Met	Thr	Phe	Ser	Leu		
				565					570					575			
aac	aat	tac	cct	gcc	ggg	gac	ccc	cgt	ctg	gcc	cag	gcc	aag	ctg	tgg	1776	
Asn	Asn	Tyr	Pro	Ala	Gly	Asp	Pro	Arg	Leu	Ala	Gln	Ala	Lys	Leu	Trp		
			580					585					590				
gag	gag	gcc	ttc	tta	gag	gaa	atg	cga	gcc	ttc	cag	cgt	cgg	atg	gct	1824	
Glu	Glu	Ala	Phe	Leu	Glu	Glu	Met	Arg	Ala	Phe	Gln	Arg	Arg	Met	Ala		
		595					600					605					
ggc	atg	ttc	cag	gtc	acg	ttc	acg	gct	gag	cgc	tct	ctg	gaa	gac	gag	1872	
Gly	Met	Phe	Gln	Val	Thr	Phe	Thr	Ala	Glu	Arg	Ser	Leu	Glu	Asp	Glu		
	610					615					620						
atc	aat	cgc	acc	aca	gct	gaa	gac	ctg	ccc	atc	ttt	gcc	acc	agc	tac	1920	
Ile	Asn	Arg	Thr	Thr	Ala	Glu	Asp	Leu	Pro	Ile	Phe	Ala	Thr	Ser	Tyr		
625					630					635					640		
att	gtc	ata	ttc	ctg	tac	atc	tct	ctg	gcc	ctg	ggc	agc	tat	tcc	agc	1968	
Ile	Val	Ile	Phe	Leu	Tyr	Ile	Ser	Leu	Ala	Leu	Gly	Ser	Tyr	Ser	Ser		
				645					650					655			
tgg	agc	cga	gtg	atg	gtg	gac	tcc	aag	gcc	acg	ctg	ggc	ctc	ggc	ggg	2016	
Trp	Ser	Arg	Val	Met	Val	Asp	Ser	Lys	Ala	Thr	Leu	Gly	Leu	Gly	Gly		
			660					665					670				
gtg	gcc	gtg	gtc	ctg	gga	gca	gtc	atg	gct	gcc	atg	ggc	ttc	ttc	tcc	2064	
Val	Ala	Val	Val	Leu	Gly	Ala	Val	Met	Ala	Ala	Met	Gly	Phe	Phe	Ser		
		675					680					685					
tac	ttg	ggt	atc	cgc	tcc	tcc	ctg	gtc	atc	ctg	caa	gtg	gtt	cct	ttc	2112	
Tyr	Leu	Gly	Ile	Arg	Ser	Ser	Leu	Val	Ile	Leu	Gln	Val	Val	Pro	Phe		
	690					695					700						
ctg	gtg	ctg	tcc	gtg	ggg	gct	gat	aac	atc	ttc	atc	ttt	gtt	ctc	gag	2160	
Leu	Val	Leu	Ser	Val	Gly	Ala	Asp	Asn	Ile	Phe	Ile	Phe	Val	Leu	Glu		
705					710					715					720		
tac	cag	agg	ctg	ccc	cgg	agg	cct	ggg	gag	cca	cga	gag	gtc	cac	att	2208	
Tyr	Gln	Arg	Leu	Pro	Arg	Arg	Pro	Gly	Glu	Pro	Arg	Glu	Val	His	Ile		
				725					730					735			
ggg	cga	gcc	cta	ggc	agg	gtg	gct	ccc	agc	atg	ctg	ttg	tgc	agc	ctc	2256	
Gly	Arg	Ala	Leu	Gly	Arg	Val	Ala	Pro	Ser	Met	Leu	Leu	Cys	Ser	Leu		
			740					745					750				
tct	gag	gcc	atc	tgc	ttc	ttc	cta	ggg	gcc	ctg	acc	ccc	atg	cca	gct	2304	
Ser	Glu	Ala	Ile	Cys	Phe	Phe	Leu	Gly	Ala	Leu	Thr	Pro	Met	Pro	Ala		

755				760				765									
gtg	cgg	acc	ttt	gcc	ctg	acc	tct	ggc	ctt	gca	gtg	atc	ctt	gac	ttc	2352	
Val	Arg	Thr	Phe	Ala	Leu	Thr	Ser	Gly	Leu	Ala	Val	Ile	Leu	Asp	Phe		
770				775				780									
ctc	ctg	cag	atg	tca	gcc	ttt	gtg	gcc	ctg	ctc	tcc	ctg	gac	agc	aag	2400	
Leu	Leu	Gln	Met	Ser	Ala	Phe	Val	Ala	Leu	Leu	Ser	Leu	Asp	Ser	Lys		
785				790				795				800					
agg	cag	gag	gcc	tcc	cgg	ttg	gac	gtc	tgc	tgc	tgt	gtc	aag	ccc	cag	2448	
Arg	Gln	Glu	Ala	Ser	Arg	Leu	Asp	Val	Cys	Cys	Cys	Val	Lys	Pro	Gln		
				805				810				815					
gag	ctg	ccc	ccg	cct	ggc	cag	gga	gag	ggg	ctc	ctg	ctt	ggc	ttc	ttc	2496	
Glu	Leu	Pro	Pro	Pro	Gly	Gln	Gly	Glu	Gly	Leu	Leu	Leu	Gly	Phe	Phe		
				820				825				830					
caa	aag	gct	tat	gcc	ccc	ttc	ctg	ctg	cac	tgg	atc	act	cga	ggg	gtt	2544	
Gln	Lys	Ala	Tyr	Ala	Pro	Phe	Leu	Leu	His	Trp	Ile	Thr	Arg	Gly	Val		
				835				840				845					
gtg	ctg	ctg	ctg	ttt	ctc	gcc	ctg	ttc	gga	gtg	agc	ctc	tac	tcc	atg	2592	
Val	Leu	Leu	Leu	Phe	Leu	Ala	Leu	Phe	Gly	Val	Ser	Leu	Tyr	Ser	Met		
				850				855				860					
tgc	cac	atc	agc	gtg	gga	ctg	gac	cag	gag	ctg	gcc	ctg	ccc	aag	gac	2640	
Cys	His	Ile	Ser	Val	Gly	Leu	Asp	Gln	Glu	Leu	Ala	Leu	Pro	Lys	Asp		
				865				870				875				880	
tcg	tac	ctg	ctt	gac	tat	ttc	ctc	ttt	ctg	aac	cgc	tac	ttc	gag	gtg	2688	
Ser	Tyr	Leu	Leu	Asp	Tyr	Phe	Leu	Phe	Leu	Asn	Arg	Tyr	Phe	Glu	Val		
				885				890				895					
ggg	gcc	ccg	gtg	tac	ttt	gtt	acc	acc	ttg	ggc	tac	aac	ttc	tcc	agc	2736	
Gly	Ala	Pro	Val	Tyr	Phe	Val	Thr	Thr	Leu	Gly	Tyr	Asn	Phe	Ser	Ser		
				900				905				910					
gag	gct	ggg	atg	aat	gcc	atc	tgc	tcc	agt	gca	ggc	tgc	aac	aac	ttc	2784	
Glu	Ala	Gly	Met	Asn	Ala	Ile	Cys	Ser	Ser	Ala	Gly	Cys	Asn	Asn	Phe		
				915				920				925					
tcc	ttc	acc	cag	aag	atc	cag	tat	gcc	aca	gag	ttc	cct	gag	cag	tct	2832	
Ser	Phe	Thr	Gln	Lys	Ile	Gln	Tyr	Ala	Thr	Glu	Phe	Pro	Glu	Gln	Ser		
				930				935				940					
tac	ctg	gcc	atc	cct	gcc	tcc	tcc	tgg	gtg	gat	gac	ttc	att	gac	tgg	2880	
Tyr	Leu	Ala	Ile	Pro	Ala	Ser	Ser	Trp	Val	Asp	Asp	Phe	Ile	Asp	Trp		
				945				950				955				960	
ctg	acc	ccg	tcc	tcc	tgc	tgc	cgc	ctt	tat	ata	tct	ggc	ccc	aat	aag	2928	
Leu	Thr	Pro	Ser	Ser	Cys	Cys	Arg	Leu	Tyr	Ile	Ser	Gly	Pro	Asn	Lys		
				965				970				975					
gac	aag	ttc	tgc	ccc	tcg	acc	gtc	aac	tct	ctg	aac	tgc	cta	aag	aac	2976	
Asp	Lys	Phe	Cys	Pro	Ser	Thr	Val	Asn	Ser	Leu	Asn	Cys	Leu	Lys	Asn		
				980				985				990					
tgc	atg	agc	atc	acg	atg	ggc	tct	gtg	agg	ccc	tcg	gtg	gag	cag	ttc	3024	
Cys	Met	Ser	Ile	Thr	Met	Gly	Ser	Val	Arg	Pro	Ser	Val	Glu	Gln	Phe		
				995				1000				1005					

cat aag tat ctt ccc tgg ttc	ctg aac gac cgg ccc aac atc aaa	3069
His Lys Tyr Leu Pro Trp Phe	Leu Asn Asp Arg Pro Asn Ile Lys	
1010	1015 1020	
tgt ccc aaa ggc ggc ctg gca	gca tac agc acc tct gtg aac ttg	3114
Cys Pro Lys Gly Gly Leu Ala	Ala Tyr Ser Thr Ser Val Asn Leu	
1025	1030 1035	
act tca gat ggc cag gtt tta	gcc tcc agg ttc atg gcc tat cac	3159
Thr Ser Asp Gly Gln Val Leu	Ala Ser Arg Phe Met Ala Tyr His	
1040	1045 1050	
aag ccc ctg aaa aac tca cag	gat tac aca gaa gct ctg cgg gca	3204
Lys Pro Leu Lys Asn Ser Gln	Asp Tyr Thr Glu Ala Leu Arg Ala	
1055	1060 1065	
gct cga gag ctg gca gcc aac	atc act gct gac ctg cgg aaa gtg	3249
Ala Arg Glu Leu Ala Ala Asn	Ile Thr Ala Asp Leu Arg Lys Val	
1070	1075 1080	
cct gga aca gac ccg gct ttt	gag gtc ttc ccc tac acg atc acc	3294
Pro Gly Thr Asp Pro Ala Phe	Glu Val Phe Pro Tyr Thr Ile Thr	
1085	1090 1095	
aat gtg ttt tat gag cag tac	ctg acc atc ctc cct gag ggg ctc	3339
Asn Val Phe Tyr Glu Gln Tyr	Leu Thr Ile Leu Pro Glu Gly Leu	
1100	1105 1110	
ttc atg ctc agc ctc tgc ctt	gtg ccc acc ttc gct gtc tcc tgc	3384
Phe Met Leu Ser Leu Cys Leu	Val Pro Thr Phe Ala Val Ser Cys	
1115	1120 1125	
ctc ctg ctg ggc ctg gac ctg	cgc tcc ggc ctc ctc aac ctg ctc	3429
Leu Leu Leu Gly Leu Asp Leu	Arg Ser Gly Leu Leu Asn Leu Leu	
1130	1135 1140	
tcc att gtc atg atc ctc gtg	gac act gtc ggc ttc atg gcc ctg	3474
Ser Ile Val Met Ile Leu Val	Asp Thr Val Gly Phe Met Ala Leu	
1145	1150 1155	
tgg gac atc agt tac aat gct	gtg tcc ctc atc aac ctg gtc tcg	3519
Trp Asp Ile Ser Tyr Asn Ala	Val Ser Leu Ile Asn Leu Val Ser	
1160	1165 1170	
gcg gtg ggc atg tct gtg gag	ttt gtg tcc cac att acc cgc tcc	3564
Ala Val Gly Met Ser Val Glu	Phe Val Ser His Ile Thr Arg Ser	
1175	1180 1185	
ttt gcc atc agc acc aag ccc	acc tgg ctg gag agg gcc aaa gag	3609
Phe Ala Ile Ser Thr Lys Pro	Thr Trp Leu Glu Arg Ala Lys Glu	
1190	1195 1200	
gcc acc atc tct atg gga agt	gcg gtg ttt gca ggt gtg gcc atg	3654
Ala Thr Ile Ser Met Gly Ser	Ala Val Phe Ala Gly Val Ala Met	
1205	1210 1215	
acc aac ctg cct ggc atc ctt	gtc ctg ggc ctc gcc aag gcc cag	3699
Thr Asn Leu Pro Gly Ile Leu	Val Leu Gly Leu Ala Lys Ala Gln	
1220	1225 1230	

ctc att cag atc ttc ttc ttc cgc ctc aac ctc ctg atc act ctg	3744
Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu	
1235 1240 1245	
ctg ggc ctg ctg cat ggc ttg gtc ttc ctg ccc gtc atc ctc agc	3789
Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser	
1250 1255 1260	
tac gtg ggg cct gac gtt aac ccg gct ctg gca ctg gag cag aag	3834
Tyr Val Gly Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys	
1265 1270 1275	
cgg gct gag gag gcg gtg gca gca gtc atg gtg gcc tct tgc cca	3879
Arg Ala Glu Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro	
1280 1285 1290	
aat cac ccc tcc cga gtc tcc aca gct gac aac atc tat gtc aac	3924
Asn His Pro Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn	
1295 1300 1305	
cac agc ttt gaa ggt tct atc aaa ggt gct ggt gcc atc agc aac	3969
His Ser Phe Glu Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn	
1310 1315 1320	
ttc ttg ccc aac aat ggg cgg cag ttc tga	3999
Phe Leu Pro Asn Asn Gly Arg Gln Phe	
1325 1330	

<210> 4

<211> 1332

<212> PRT

<213> Homo sapiens

<400> 4

Met Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu	
1 5 10 15	
Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr	
20 25 30	
Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser	
35 40 45	
Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg	
50 55 60	
Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg	
65 70 75 80	

Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu
 85 90 95

Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
 100 105 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr
 115 120 125

Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
 130 135 140

Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
 145 150 155 160

Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
 165 170 175

Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
 180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
 195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
 210 215 220

Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
 225 230 235 240

Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
 245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
 260 265 270

Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
 275 280 285

Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
 290 295 300

Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
 305 310 315 320

Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu

				325						330						335
Leu	Gly	Gln	Phe	Phe	Gln	Gly	Trp	Gly	Thr	Trp	Val	Ala	Ser	Trp	Pro	
			340					345					350			
Leu	Thr	Ile	Leu	Val	Leu	Ser	Val	Ile	Pro	Val	Val	Ala	Leu	Ala	Ala	
		355					360					365				
Gly	Leu	Val	Phe	Thr	Glu	Leu	Thr	Thr	Asp	Pro	Val	Glu	Leu	Trp	Ser	
	370					375					380					
Ala	Pro	Asn	Ser	Gln	Ala	Arg	Ser	Glu	Lys	Ala	Phe	His	Asp	Gln	His	
385					390					395					400	
Phe	Gly	Pro	Phe	Phe	Arg	Thr	Asn	Gln	Val	Ile	Leu	Thr	Ala	Pro	Asn	
				405					410					415		
Arg	Ser	Ser	Tyr	Arg	Tyr	Asp	Ser	Leu	Leu	Leu	Gly	Pro	Lys	Asn	Phe	
			420					425					430			
Ser	Gly	Ile	Leu	Asp	Leu	Asp	Leu	Leu	Leu	Glu	Leu	Leu	Glu	Leu	Gln	
		435					440					445				
Glu	Arg	Leu	Arg	His	Leu	Gln	Val	Trp	Ser	Pro	Glu	Ala	Gln	Arg	Asn	
	450					455					460					
Ile	Ser	Leu	Gln	Asp	Ile	Cys	Tyr	Ala	Pro	Leu	Asn	Pro	Asp	Asn	Thr	
465					470					475					480	
Ser	Leu	Tyr	Asp	Cys	Cys	Ile	Asn	Ser	Leu	Leu	Gln	Tyr	Phe	Gln	Asn	
				485					490					495		
Asn	Arg	Thr	Leu	Leu	Leu	Leu	Thr	Ala	Asn	Gln	Thr	Leu	Met	Gly	Gln	
			500					505					510			
Thr	Ser	Gln	Val	Asp	Trp	Lys	Asp	His	Phe	Leu	Tyr	Cys	Ala	Asn	Ala	
		515					520					525				
Pro	Leu	Thr	Phe	Lys	Asp	Gly	Thr	Ala	Leu	Ala	Leu	Ser	Cys	Met	Ala	
	530					535					540					
Asp	Tyr	Gly	Ala	Pro	Val	Phe	Pro	Phe	Leu	Ala	Ile	Gly	Gly	Tyr	Lys	
545					550					555					560	
Gly	Lys	Asp	Tyr	Ser	Glu	Ala	Glu	Ala	Leu	Ile	Met	Thr	Phe	Ser	Leu	
				565					570					575		

Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
 580 585 590

Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
 595 600 605

Gly Met Phe Gln Val Thr Phe Thr Ala Glu Arg Ser Leu Glu Asp Glu
 610 615 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
 625 630 635 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
 645 650 655

Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
 660 665 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
 675 680 685

Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
 690 695 700

Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
 705 710 715 720

Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
 725 730 735

Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
 740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
 755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
 770 775 780

Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
 785 790 795 800

Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
 805 810 815

Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe
820 825 830

Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
835 840 845

Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met
850 855 860

Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865 870 875 880

Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val
885 890 895

Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser
900 905 910

Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe
915 920 925

Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
930 935 940

Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945 950 955 960

Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
965 970 975

Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
980 985 990

Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe
995 1000 1005

His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys
1010 1015 1020

Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu
1025 1030 1035

Thr Ser Asp Gly Gln Val Leu Ala Ser Arg Phe Met Ala Tyr His
1040 1045 1050

Lys	Pro	Leu	Lys	Asn	Ser	Gln	Asp	Tyr	Thr	Glu	Ala	Leu	Arg	Ala
	1055					1060					1065			
Ala	Arg	Glu	Leu	Ala	Ala	Asn	Ile	Thr	Ala	Asp	Leu	Arg	Lys	Val
	1070					1075					1080			
Pro	Gly	Thr	Asp	Pro	Ala	Phe	Glu	Val	Phe	Pro	Tyr	Thr	Ile	Thr
	1085					1090					1095			
Asn	Val	Phe	Tyr	Glu	Gln	Tyr	Leu	Thr	Ile	Leu	Pro	Glu	Gly	Leu
	1100					1105					1110			
Phe	Met	Leu	Ser	Leu	Cys	Leu	Val	Pro	Thr	Phe	Ala	Val	Ser	Cys
	1115					1120					1125			
Leu	Leu	Leu	Gly	Leu	Asp	Leu	Arg	Ser	Gly	Leu	Leu	Asn	Leu	Leu
	1130					1135					1140			
Ser	Ile	Val	Met	Ile	Leu	Val	Asp	Thr	Val	Gly	Phe	Met	Ala	Leu
	1145					1150					1155			
Trp	Asp	Ile	Ser	Tyr	Asn	Ala	Val	Ser	Leu	Ile	Asn	Leu	Val	Ser
	1160					1165					1170			
Ala	Val	Gly	Met	Ser	Val	Glu	Phe	Val	Ser	His	Ile	Thr	Arg	Ser
	1175					1180					1185			
Phe	Ala	Ile	Ser	Thr	Lys	Pro	Thr	Trp	Leu	Glu	Arg	Ala	Lys	Glu
	1190					1195					1200			
Ala	Thr	Ile	Ser	Met	Gly	Ser	Ala	Val	Phe	Ala	Gly	Val	Ala	Met
	1205					1210					1215			
Thr	Asn	Leu	Pro	Gly	Ile	Leu	Val	Leu	Gly	Leu	Ala	Lys	Ala	Gln
	1220					1225					1230			
Leu	Ile	Gln	Ile	Phe	Phe	Phe	Arg	Leu	Asn	Leu	Leu	Ile	Thr	Leu
	1235					1240					1245			
Leu	Gly	Leu	Leu	His	Gly	Leu	Val	Phe	Leu	Pro	Val	Ile	Leu	Ser
	1250					1255					1260			
Tyr	Val	Gly	Pro	Asp	Val	Asn	Pro	Ala	Leu	Ala	Leu	Glu	Gln	Lys
	1265					1270					1275			
Arg	Ala	Glu	Glu	Ala	Val	Ala	Ala	Val	Met	Val	Ala	Ser	Cys	Pro

1280		1285		1290
Asn His Pro Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn				
1295		1300		1305
His Ser Phe Glu Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn				
1310		1315		1320
Phe Leu Pro Asn Asn Gly Arg Gln Phe				
1325		1330		

<210> 5

<211> 885

<212> DNA

<213> Rattus sp.

<400> 5

ccacgcgtcc gcacctgcaa gtgtgggtccc ctgaggcaga gcgcaacatc tccctccagg	60
acatctgcta tgccccctc aacctatata acaccagcct ctccgactgc tgtgtcaaca	120
gcctccttca gtacttccag aacaaccgca cctcctgat gctcacggcc aaccagactc	180
tgaatggcca gacctccctg gtggactgga aggaccattt cctctactgt gcaaagtccc	240
ctctcacgtt caaagatggc acgtctctgg ccctgagctg catggctgac tacggggctc	300
ctgtcttccc cttccttgct gttgggggat accaaggcac ggactattcc gaggcagaag	360
cgctgatcat aaccttctct ctcaataact accccgctga tgatccccgc atggcccagg	420
ccaagctctg ggaggaggct ttcttgaagg aaatggaatc cttccagagg aacacaagtg	480
acaagttcca ggttgcgttc tcagctgagc gctctctgga ggatgagatc aaccgcacca	540
ccatccagga cctgcctgtc tttgccgtca gctacattat cgtcttcttg tacatctccc	600
tggccctggg cagctactcc agatgcagcc gagtagcggg ggagtccaag gctactctgg	660
gcctaggtgg ggtgatagtg tgctgggagc agttcttggt tgcattggggc ttctaactcc	720
tacctgggtg tcccctcttc tctggttatc atccaagtgg tacctttcct ggtgcttaag	780
ctgtgggagc tggacacatc tacatcctag acttgagtac cagagggtacc taggaagccg	840
cggaacagcg aaaaggacac attggggcgca ccctgggcat gtggc	885

<210> 6

<211> 458

<212> DNA

<213> Rattus sp.

<400> 6

gaccagatgt taaccaagct ctggtacagg aggagaaact agccagcgag gcagcagtgg	60
ccccagagcc ttcttgccca cagtaccctt cccctgctga tgcggatgcc aatgttaact	120
acggctttgc ccagaactt gccacaggag ctaatgctgc tagaagctct ttgccccaaa	180
gtgaccaaaa gttctaattg agtaggagct tgtccatgct tctgctgatg agggatcatg	240
aaggctcttc ctctggttgt cctcaaggcc tggggggagg ttgttcagag aaaaatggct	300
ggcattcctg ccacgaggca accggcagct tggcactgac tccttggctc cataggtccc	360
taaggcttgg tcagattact cctcatggag agactatctt aagtatctaa gctatcgatt	420
gggatgcac gctgttcatt aaaaaggcta tggctatg	458

<210> 7

<211> 896

<212> DNA

<213> Rattus sp.

<400> 7

ccacgcgtcc gcagtttcat aagtacctgc cctggttcct gaatgatccg cccaatatca	60
gatgtcccaa aggggggtcta gcagcgtata gaacgtctgt gaatttgagc tcagatggcc	120
aggttatagc ctcccagttc atggcctacc acaagccctt aagggaactca caggacttca	180
cagaagctct ccgggcgtcc cggttgctag cagccaacat cacagctgac ctacggaagg	240
tgcctgggac agatccaaac tttgaggtct tcccttacac gatctccaac gtgttctacc	300
agcaatacct gacggtcctt cctgagggaa tcttcaccct tgctctttgc tttgtgcccc	360
cctttgttgt ctgctacctc ctactgggccc tggacatgtg ctcagggatc ctcaacctac	420
tctccatcat tatgattctc gtggacacca ttggcctcat ggctgtgtgg ggtatcagct	480
ataatgcggt atccctcatc aaccttgtca cggcagtggg catgtctgtg gagtttgtgt	540
cccacatcac tcggtccttt gcttgtaagc accaagccta cccggctgga gagggctaaa	600
agatgtact gtcttcatgg gcagtgcggt gtttgctgga gtggccatga ccaacttccc	660
aggcatctc atcttggggg ctttgcccca agcccaggct tattcagatc ttcttcttcc	720
gcctcaacct tctgatcacc tttgctgggg tctgctgcat ggctggctct cctgcccggg	780

ttgtcctcag ctatctggga ccagatgtaa ccaaggctct gctacccgga ggagaaacta	840
gccagcgagg gcagcagtgg ccccagagac ttcttgccca caagtaccct tccctg	896

<210> 8

<211> 3124

<212> DNA

<213> Rattus sp.

<400> 8

tgcaagtgtg gtccccctgag gcagagcgca acatctccct ccaggacatc tgctatgccc	60
ccctcaaccc atataacacc agcctctccg actgctgtgt caacagcctc cttcagtact	120
tccagaacaa ccgcaccctc ctgatgctca cggccaacca gactctgaat ggccagacct	180
ccctgggtgga ctggaaggac catttcctct actgtgcaaa tgccccctc acgttcaaag	240
atggcacgtc tctggccctg agctgcatgg ctgactacgg ggctcctgtc ttcccccttc	300
ttgctgttgg gggataccaa ggcacggact attccgaggc agaagcgctg atcataacct	360
tctctctcaa taactacccc gctgatgac cccgcatggc ccaggccaag ctctgggagg	420
aggctttctt gaaggaaatg gaatccttcc agaggaaacac aagtgacaag ttccaggttg	480
cgttctcagc tgagcgctct ctggaggatg agatcaaccg caccaccatc caggacctgc	540
ctgtctttgc cgtcagctac attatcgtct tcctgtacat ctccctggcc ctgggcagct	600
actccagatg cagccgagta gcggtggagt ccaaggctac tctgggccta ggtggggtga	660
ttgttgtgct gggagcagtt ctggctgcca tgggcttcta ctctacctg ggtgtccct	720
cttctctggg tatcatccaa gtggtacctt tcctgggtgct agctgtggga gctgacaaca	780
tcttcatctt tgttcttgag taccagaggc tacctaggat gcctggggaa cagcgagagg	840
ctcacattgg ccgcaccctg ggcagtgtgg cccccagcat gctgctgtgc agcctctctg	900
aggccatctg cttctttcta ggggccctga ccccatgcc agctgtgagg accttcgcct	960
tgacctctgg cttagcaatt atcctcgact tcctgctcca gatgactgcc tttgtggccc	1020
tgctctccct ggatagcaag aggcaggagg cctctcgccc ggatgtctta tgctgctttt	1080
caacccggaa gctgccccca cctaaagaaa aagaaggcct cttactccgc ttcttccgca	1140
agatatacgc tcctttcctg ctgcacagat tcatccgccc tgttgtgatg ctgctgtttc	1200
tgaccctggt tggagcaaat ctctacttaa tgtgcaacat caacgtgggg ctagaccagg	1260
agctgggtct gcccaaggac tcgtacttga tagactactt cctctttctg aaccgatacc	1320
ttgaagtggg gcctccagtg tactttgtca ccacctcggg cttcaacttc tccagcgagg	1380

caggcatgaa cgccacttgc tctagcgcag gctgtaagag cttctcccta acccagaaaa	1440
tccagtatgc cagtgaattc cctgaccagt cttacgtggc tattgctgca tcctcctggg	1500
tagatgactt catcgactgg ctgaccccggt cctcctcctg ctgtcgcctt tatatacgtg	1560
gccccataa ggatgagttc tgtccctcaa cggatacttc cttcaactgc ttaaaaaact	1620
gcatgaaccg cactctgggt cctgtgagge ccacagcgga acagtttcat aagtacctgc	1680
cctggttcct gaatgatccg cccaatatca gatgtcccaa aggggggtcta gcagcgtata	1740
gaacgtctgt gaatttgagc tcagatggcc aggttatagc ctcccagttc atggcctacc	1800
acaagccctt aaggaactca caggacttca cagaagctct ccgggcgtcc cggttgctag	1860
cagccaacat cacagctgac ctacggaagg tgcctgggac agatccaaac tttgaggtct	1920
tcccttacac gatctccaac gtgttctacc agcaatacct gacggtcctt cctgagggaa	1980
tcttcaccct tgctctttgc tttgtgcca cctttgttgt ctgctacctc ctactgggcc	2040
tggacatgtg ctcagggatc ctcaacctac tctccatcat tatgattctc gtggacacca	2100
ttggcctcat ggctgtgtgg ggtatcagct ataatgcggt atccctcatc aaccttgtca	2160
cggcagtggg catgtctgtg gagtttgtgt cccacatcac tcggtccttt gctgtaagca	2220
ccaagcctac ccggctggag agggctaaag atgctactgt cttcatgggc agtgcggtgt	2280
ttgctggagt ggccatgacc aacttcccag gcatcctcat cttgggcttt gcccaagccc	2340
agcttattca gatcttcttc ttccgctca accttctgat caccttgctg ggtctgctgc	2400
atggcctggt cttcctgccg gttgtcctca gctatctggg accagatgtt aaccaagctc	2460
tggtagagga ggagaaacta gccagcgagg cagcagtggc cccagagcct tcttgcccac	2520
agtaccctc cctgctgat gcggatgcca atgttaacta cggctttgcc ccagaacttg	2580
cccacggagc taatgctgct agaagctctt tgcccaaaag tgaccaaaag ttctaattgga	2640
gtaggagctt gtccatgctt cttgctgatg agggatcatg aaggctcttc ctctggttgt	2700
cctcaaggcc tggggggagg ttgtttcaga gaaaaatggc tggcattcct gccacgaggc	2760
aaccggcagc attggcactg acctccttgc tctcataggt ccctaaggcc ttggtcagat	2820
tacctctcc atggagagac tatcttaagt atcttaagta tcgtatggga tgcacgcct	2880
gtcaattaaa aaggctatgg cctatggctc aggcagggcc atccggaaga agagaggatt	2940
ctgggataaa gccagggtgg agattcgctt ggggaaaatg tgacaatggt tcctgagcat	3000
gggcaatcag ccatgtggca gaatgtaaat taatataaat gggttgtctt aagttatgat	3060
tctagctggg gaggagccta gctgtgtagc caagatatct gtaaataata aaaaaaaaaa	3120
aaaa	3124

<210> 9
 <211> 4484
 <212> DNA
 <213> Rattus sp.

<400> 9
 atggcagctg cctggctggg atggctgctc tgggccctgc tcctgagcgc ggcccagggt 60
 gagctataca cacccaaaca cgaagctggg gtctgcacct tttagaaga gtgcgggaaa 120
 aaccagagc tctctggagg cctcacgtca ctatccaatg tatcctgcct gtctaacc 180
 ccggccccgc acgtcacggg tgaacacctg gctcttctcc agcgcctctg tccccgcctg 240
 tacaacggcc ccaataccac ttttgccctg tgctctacca agcagctgct gtccttagaa 300
 agcagcatgt ccatcaccaa ggcccttctc acgcgctgcc cggcctgctc tgacaatttt 360
 gtgagcttac actgccacaa cacttgacgc cctgaccaga gcctcttcat caacgtcacc 420
 cgggtggttg agcggggcgc tggagagcct cctgccgtgg tggcctatga ggccctttat 480
 cagcgcagct ttgctgagaa ggccctatgag tcctgcagcc aggtgcgcat ccctgcccc 540
 gcttccttgg ccgtgggcag catgtgtgga gtgtatggct ccgccctctg caatgctcag 600
 cgctgggtca acttccaagg agacacaggg aatggcctgg ctccgctgga tatcaccttc 660
 cacctcttgg agcctggcca ggccctaccg gatgggatcc agccactgaa tgggaagatc 720
 gcaccctgca acgagtctca ggggtgatgac tcagcagtct gctcctgcca ggactgtgcg 780
 gcgtcctgcc ctgtcatccc tccgcccagag gccttgccgc cttccttcta catgggtcgc 840
 atgccaggct ggctggccct catcatcatc ttactgctg tctttgtgtt gctctctgca 900
 gtccttgtgc gtctccgagt ggtttccaac aggaacaaga acaaggcaga agggccccag 960
 gaagccccca aactccctca taagcacaaa ctctcaccac ataccatcct gggccggttc 1020
 ttccagaact ggggcacaag ggtggcctcg tggccactca ccgtcttagc actgtccttc 1080
 atcgttgtga tagccttagc agcaggcctg acctttattg aactcaccac agaccctgtg 1140
 gaactgtggt cggcccccaa gagccaggcc cggaaagaga agtctttcca tgatgagcat 1200
 ttcggcccct tctttcgaac caaccagatt ttcgtgacag ctcggaacag gtccagctac 1260
 aagtacgact ccctactgct agggccaag aacttcagtg ggatcctgtc cctggacttc 1320
 ctgctggagc tgctggagct tcaggagagg ctctgacacc tgcaagtgtg gtcccctgag 1380
 gcagagcgca acatctccct ccaggacatc tgctatgccc ccctcaacc atataacc 1440
 agcctctccg actgctgtgt caacagcctc cttcagtact tccagaacaa ccgcaccctc 1500

ctgatgctca	cggccaacca	gactctgaat	ggccagacct	ccctggtgga	ctggaaggac	1560
catttcctct	actgtgcaaa	tgccctcttc	acgttcaaag	atggcacgtc	tctggccctg	1620
agctgcatgg	ctgactacgg	ggctcctgtc	ttcccccttc	ttgctgttgg	gggataccaa	1680
ggcacggact	attccgaggc	agaagcgctg	atcataacct	tctctctcaa	taactacccc	1740
gctgatgatc	cccgcattgg	ccaggccaag	ctctgggagg	aggctttctt	gaaggaaatg	1800
gaatccttcc	agaggaacac	aagtgacaag	ttccagggtg	cgttctcagc	tgagcgctct	1860
ctggagggatg	agatcaaccg	caccaccatc	caggacctgc	ctgtctttgc	cgtcagctac	1920
attatcgtct	tcctgtacat	ctccctggcc	ctgggcagct	actccagatg	cagccgagta	1980
gcggtggagt	ccaaggctac	tctgggccta	ggtgggggtga	ttgttgtgct	gggagcagtt	2040
ctggctgcca	tgggcttcta	ctcctacctg	ggtgtcccct	cttctctggt	tatcatccaa	2100
gtggtacctt	tcctggtgct	agctgtggga	gctgacaaca	tcttcatctt	tgttcttgag	2160
taccagaggc	tacctaggat	gcctggggaa	cagcgagagg	ctcacattgg	ccgcaccctg	2220
ggcagtgtgg	ccccagcat	gctgctgtgc	agcctctctg	aggccatctg	cttctttcta	2280
ggggccctga	ccccatgcc	agctgtgagg	accttcgcct	tgacctctgg	cttagcaatt	2340
atcctcgact	tcctgtcca	gatgactgcc	tttgtggccc	tgctctccct	ggatagcaag	2400
aggcaggagg	cctctcgccc	ggatgtctta	tgctgctttt	caaccggaa	gctgccccca	2460
cctaaagaaa	aagaaggcct	cttactccgc	ttcttccgca	agatatacgc	tcctttctctg	2520
ctgcacagat	tcacccgccc	tgttgtgatg	ctgctgtttc	tgacctgtt	tggagcaaatt	2580
ctctacttaa	tgtgcaacat	caacgtgggg	ctagaccagg	agctggctct	gccaaggac	2640
tcgtacttga	tagactactt	cctctttctg	aaccgatacc	ttgaagtggg	gcctccagtg	2700
tactttgtca	ccacctcggg	cttcaacttc	tccagcgagg	caggcatgaa	cgccacttgc	2760
tctagcgcag	gctgtaagag	cttctcccta	acccagaaaa	tccagtatgc	cagtgaattc	2820
cctgaccagt	cttacgtggc	tattgctgca	tcctcctggg	tagatgactt	catcgactgg	2880
ctgaccccg	cctcctcctg	ctgtcgccct	tatatacgtg	gccccataa	ggatgagttc	2940
tgtccctcaa	cggatacttc	cttcaactgc	ttaaaaaact	gcatgaaccg	cactctgggt	3000
cctgtgaggc	ccacagcgga	acagtttcat	aagtacctgc	cctggttcct	gaatgatccg	3060
cccaatatca	gatgtcccaa	aggggggtcta	gcagcgtata	gaacgtctgt	gaatttgagc	3120
tcagatggcc	aggttatagc	ctcccagttc	atggcctacc	acaagccctt	aaggaactca	3180
caggacttca	cagaagctct	ccgggcgtcc	cggttgctag	cagccaacat	cacagctgac	3240
ctacggaagg	tgcttgggac	agatccaaac	tttgagggtct	ttccttacac	gatctccaac	3300

```

gtgttctacc agcaatacct gacggtcctt cctgagggaa tcttcaccct tgctctttgc 3360
tttgtgcca cctttgttgt ctgctacctc ctactgggcc tggacatgtg ctcagggatc 3420
ctcaacctac tctccatcat tatgattctc gtggacacca ttggcctcat ggctgtgtgg 3480
ggtatcagct ataatgcggt atccctcacc aaccttgtca cggcagtggg catgtctgtg 3540
gagtttgtgt cccacatcac tcggtccttt gctgtaagca ccaagcctac ccggctggag 3600
agggctaaag atgctactgt cttcatgggc agtgcggtgt ttgctggagt ggccatgacc 3660
aacttcccag gcatcctcat cttgggcttt gcccaagccc agcttattca gatcttcttc 3720
ttccgcctca accttctgat caccttgctg ggtctgctgc atggcctggg cttcctgccg 3780
gttgtcctca gctatctggg accagatggt aaccaagctc tggtagagga ggagaaacta 3840
gccagcgagg cagcagtggc cccagagcct tcttgccac agtaccctc ccctgctgat 3900
gcggatgcca atgttaacta cggttttgcc ccagaacttg cccacggagc taatgctgct 3960
agaagctctt tgcccaaaag tgacaaaag ttctaattga gtaggagctt gtccatgctt 4020
cttgctgatg agggatcatg aaggctcttc ctctggttgt cctcaaggcc tggggggagg 4080
ttgtttcaga gaaaaatggc tggcattcct gccacgaggc aaccggcagc attggcactg 4140
acctccttgc tctcataggt ccctaaggcc ttggtcagat tacctcctcc atggagagac 4200
tatcttaagt atcttaagta tcgtatggga tgcacgcct gtcaattaaa aaggctatgg 4260
cctatggctc aggcagggcc atccggaaga agagaggatt ctgggataaa gccagggtggg 4320
agattcgcct ggggaaaatg tgacaatggt tcctgagcat gggcaatcag ccatgtggca 4380
gaatgtaa ataatataaat gggttgtctt aagttatgat tctagctggg gaggagccta 4440
gctgtgtagc caagatattt gtaaataata aaaaaaaaaa aaaa 4484

```

<210> 10

<211> 3993

<212> DNA

<213> Rattus sp.

<220>

<221> misc_feature

<222> (1)..(3993)

<223> n is g or a or t or c

<400> 10

atggcngcng cntggytngg ntggytnytn tgggcnynyn tnytnwsngc ngcncarggn 60

garytntaya	cncncaarca	ygargcnggn	gtntgyacnt	tytaygarga	rtgyggnaar	120
aayccngary	tnwsnggngg	nytnacnwsn	ytnwsnaayg	tnwsntgyyt	nwsnaayacn	180
ccngcnmgnc	aygtnacngg	ngarcayytn	gcnytnytn	armgnathtg	yccnmgnyn	240
tayaayggnc	cnaayacnac	nttygcntgy	tgywsnacna	arcarytnyt	nwsnytnGAR	300
wsnwsnatgw	snathacnaa	rgcnytnytn	acnmngtgyc	cngcntgyws	ngayaaytty	360
gtnwsnytn	aytgycayaa	yacntgywsn	ccngaycarw	snytnnttyat	haaygtnacn	420
mgngtngtng	armgnggngc	ngnggarccn	ccngcngtng	tngcntayga	rgcnttytay	480
carmgnwsnt	tygcngaraa	rgcntaygar	wsntgywsnc	argtnmgnat	hccngcngcn	540
gcnwsnytn	cngtnggnws	natgtgygg	gtntayggnw	sngcnytn	yaaygcncar	600
mgntggytna	ayttycargg	ngayacnggn	aayggnytn	cncnytnGA	yathacntty	660
cayytnytn	arccnggnca	rgcnytnccn	gayggnahtc	arccnytnaa	yggnaarath	720
gcncntgya	aygarwsnca	rggngaygay	wsngcngtnt	gywsntgyca	rgaytgygcn	780
gcnwsntgy	cngtnathcc	nccncngar	gcnytnmgnc	cnwsnttyta	yatgggnmgn	840
atgccnggnt	ggytngcnyt	nathathath	ttyacngcng	tnntygtnyt	nytnwsngcn	900
gtnytngtm	gnytnmgnt	ngtnwsnaay	mgnaayaara	ayaargcnga	rggncncar	960
gargcncna	arytnccna	yaarcayaar	ytnwsnccnc	ayacnathyt	nggnmgntty	1020
ttycaraayt	gggnacnmg	ngtngcnwsn	tgccnytna	cngtnytn	nytnwsntty	1080
athgtngtna	thgcnyn	ngcnggnytn	acnttyathg	arytnacnac	ngayccngtn	1140
garytntggw	sngcncnaa	rwsncargcn	mgnaargara	arwsnttyca	ygaygarca	1200
tyggncnt	tyttymgnac	naaycarath	tygtnacng	cnmgnaaymg	nwsnwsntay	1260
aartaygayw	snytnytnyt	nggnwsnaar	aayttywsng	gnathytnws	nytnGaytty	1320
ytnytngary	tnytngaryt	ncargarmgn	ytnmgncayy	tncargtntg	gwsnccngar	1380
gcngarmgna	ayathwsnyt	ncargayath	tgytaygcnc	cnytnaaycc	ntayaayacn	1440
wsnytnwsng	aytgytgygt	naaywsnytn	ytncartayt	tycaraayaa	ymgnacnytn	1500
ytnatgytna	cngcnaayca	racnytnaay	ggncaracnw	snytngtnga	ytggaargay	1560
cayttyytnt	aytgygcnaa	ygncncnytn	acnttyaarg	ayggnacnws	nytnGcnyn	1620
wsntgyatgg	cngaytaygg	ngcncngtn	tyccnttyy	tngcngtngg	nggntaycar	1680
ggnacngayt	aywsngargc	ngargcnytn	athathacnt	tywsnytnaa	yaaytayccn	1740
gcngaygayc	cnmgnatggc	ncargcnaar	ytnTgggarg	argcnttyyt	naargaratg	1800
garwsnttyc	armgnaayac	nwsngayaar	ttycargtng	cnttywsngc	ngarmgnwsn	1860

ytnngargayg	arathaaymg	nacnacnath	cargayytnc	cngtnttygc	ngtnwsntay	1920
athathgtnt	tyytntayat	hwsnytnngcn	ytnggnwsnt	aywsnmngtg	ywsnmngngtn	1980
gcngtngarw	snaargcnac	nytnnggnytn	ggnggngtna	thgtngtnyt	nggngcngtn	2040
ytngcngcna	tgggnttyta	ywsntayytn	ggngtnccnw	snwsnytngt	nathathcar	2100
gtngtnccnt	tyytngtnyt	ngcngtnggn	gcngayaaya	thttyathtt	ygtnytngar	2160
taycarmgny	tnccnmgnat	gccnggngar	carmgngarg	cncayathgg	nmgnacnytn	2220
ggnwsngtng	cncnwsnat	gytnytntgy	wsnytnwsng	argcnathtg	ytttyttyytn	2280
ggngcnytna	cncnatgcc	ngcngtnmgn	acnttygcny	tnacnwsngg	nytngcnath	2340
athytngayt	tyytnytnca	ratgacngcn	ttygtngcny	tnytnwsnyt	ngaywsnaar	2400
mgncargarg	cnwsnmgncc	ngaygtnytn	tgytgyttyw	snacnmgnaa	rytnccnccn	2460
ccnaargara	argarggnyt	nytnytnmgn	ttyttymgna	arathtaygc	nccnttyytn	2520
ytncaymgnt	tyathmgnc	ngtngtnatg	ytnytnntty	tnacnytnnt	yggngcnaay	2580
ytntayytna	tgtgyaayat	haaygtnggn	ytngaycarg	arytngcnyt	nccnaargay	2640
wsntayytna	thgaytaytt	yytnnttyytn	aaymgntayy	tngargtngg	nccncngtn	2700
tayttygtna	cnacnwsngg	nttyaaytty	wsnwsngarg	cnggnatgaa	ygcnaentgy	2760
wsnwsngcng	gntgyaarws	nttywsnytn	acncaraara	thcartaygc	nwsngartty	2820
ccngaycarw	sntaygtngc	nathgcngcn	wsnwsntggg	tngaygaytt	yathgaytgg	2880
ytnacnccnw	snwsnwsntg	ytgymgnytn	tayathmgng	gncncayaa	rgaygartty	2940
tgyccnwsna	cngayacnws	nttyaaytgy	ytnaaraayt	gyatgaaymg	nacnytnngn	3000
ccngtnmgnc	cnacngcnga	rcarttycay	aartayytnc	cntgggttyt	naaygayccn	3060
ccnaayathm	gntgyccnaa	rggnggnytn	gcngcntaym	gnacnwsngt	naayytwnsn	3120
wsngayggnc	argtnathgc	nwsncartty	atggcntayc	ayaarccnyt	nmgnaaywsn	3180
cargayttya	cngargcnyt	nmngncnwsn	mgnytnytng	cngcnaayat	hacngcngay	3240
ytnmgnaarg	tnccnggnac	ngayccnaay	ttygargtnt	tyccntayac	nathwsnaay	3300
gtnttytayc	arcartayyt	nacngtnytn	ccngarggna	thttyacnyt	ngcnytnntgy	3360
ttygtncna	cnttygtngt	ntgytayytn	ytnytnngny	tngayatgtg	ywsnggnath	3420
ytnaayytny	tnwsnathat	hatgathytn	gtngayacna	thggnytnat	ggcngtntgg	3480
ggcnathwsnt	ayaaygcngt	nwsnytnath	aayytngtna	cngcngtngg	natgwsngtn	3540
garttygtnw	sncayathac	nmgnwsntty	gcngtnwsna	cnaarccnac	nmgnytnngar	3600
mgngcnaarg	aygcnacngt	nttyatgggn	wsngcngtnt	tygcnggngt	ngcnatgaen	3660

aayttyccng gnathytnat hytnggntty gncargcnc arytnathca rathttytty 3720
 ttygmnytna ayytnytnat hacnytnytn ggnytnytn ayggnytngt nttyytnccn 3780
 gtngtnytnw sntayytnng nccngaygtn aaycargcny tngtncarga rgaraarytn 3840
 gcnwsngarg cngcngtngc nccngarccn wsntgyccnc artayccnws nccngcngay 3900
 gcngaygcna aygtnaayta yggnttygcn ccngarytnng cncayggngc naaygcngcn 3960
 mgnwsnwsny tncnnaarws ngaycaraar tty 3993

<210> 11

<211> 4002

<212> DNA

<213> Mus sp.

<220>

<221> CDS

<222> (1)..(4002)

<223>

<400> 11

atg gca gct gcc tgg cag gga tgg ctg ctc tgg gcc ctg ctc ctg aat 48
 Met Ala Ala Ala Trp Gln Gly Trp Leu Leu Trp Ala Leu Leu Leu Asn
 1 5 10 15

tgc gcc cag ggt gag ctc tac aca ccc act cac aaa gct ggc ttc tgc 96
 Ser Ala Gln Gly Glu Leu Tyr Thr Pro Thr His Lys Ala Gly Phe Cys
 20 25 30

acc ttt tat gaa gag tgt ggg aag aac cca gag ctt tct gga ggc ctc 144
 Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu
 35 40 45

aca tca cta tcc aat atc tcc tgc ttg tct aat acc cca gcc cgc cat 192
 Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His
 50 55 60

gtc aca ggt gac cac ctg gct ctt ctc cag cgc gtc tgt ccc cgc cta 240
 Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu
 65 70 75 80

tac aat ggc ccc aat gac acc tat gcc tgt tgc tct acc aag cag ctg 288
 Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu
 85 90 95

gtg tca tta gac agt agc ctg tct atc acc aag gcc ctc ctt aca cgc 336
 Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
 100 105 110

tgc ccg gca tgc tct gaa aat ttt gtg agc ata cac tgt cat aat acc	384
Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr	
115 120 125	
tgc agc cct gac cag agc ctc ttc atc aat gtt act cgc gtg gtt cag	432
Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Gln	
130 135 140	
cgg gac cct gga cag ctt cct gct gtg gtg gcc tat gag gcc ttt tat	480
Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr	
145 150 155 160	
caa cgc agt ttt gca gag aag gcc tat gag tcc tgt agc cgg gtg cgc	528
Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg	
165 170 175	
atc cct gca gct gcc tcg ctg gct gtg ggc agc atg tgt gga gtg tat	576
Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr	
180 185 190	
ggc tct gcc ctc tgc aat gct cag cgc tgg ctc aac ttc caa gga gac	624
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp	
195 200 205	
aca ggg aat ggc ctg gct ccg ctg gac atc acc ttc cac ctc ttg gag	672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu	
210 215 220	
cct ggc cag gcc ctg gca gat ggg atg aag cca ctg gat ggg aag atc	720
Pro Gly Gln Ala Leu Ala Asp Gly Met Lys Pro Leu Asp Gly Lys Ile	
225 230 235 240	
aca ccc tgc aat gag tcc cag ggt gaa gac tcg gca gcc tgt tcc tgc	768
Thr Pro Cys Asn Glu Ser Gln Gly Glu Asp Ser Ala Ala Cys Ser Cys	
245 250 255	
cag gac tgt gca gca tcc tgc cct gtc atc cct ccg ccc ccg gcc ctg	816
Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Ala Leu	
260 265 270	
cgc cct tct ttc tac atg ggt cga atg cca ggc tgg ctg gct ctc atc	864
Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile	
275 280 285	
atc atc ttc act gct gtc ttt gta ttg ctc tct gtt gtc ctt gtg tat	912
Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Val Val Leu Val Tyr	
290 295 300	
ctc cga gtg gct tcc aac agg aac aag aac aag aca gca ggc tcc cag	960
Leu Arg Val Ala Ser Asn Arg Asn Lys Asn Lys Thr Ala Gly Ser Gln	
305 310 315 320	
gaa gcc ccc aac ctc cct cgt aag cgc aga ttc tca cct cac act gtc	1008
Glu Ala Pro Asn Leu Pro Arg Lys Arg Arg Phe Ser Pro His Thr Val	
325 330 335	
ctt ggc cgg ttc ttc gag agc tgg gga aca agg gtg gcc tca tgg cca	1056
Leu Gly Arg Phe Phe Glu Ser Trp Gly Thr Arg Val Ala Ser Trp Pro	
340 345 350	

ctc act gtc ttg gca ctg tcc ttc ata gtt gtg ata gcc ttg tca gta	1104
Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ser Val	
355 360 365	
ggc ctg acc ttt ata gaa ctc acc aca gac cct gtg gaa ctg tgg tcg	1152
Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser	
370 375 380	
gcc cct aaa agc caa gcc cgg aaa gaa aag gct ttc cat gac gag cat	1200
Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ala Phe His Asp Glu His	
385 390 395 400	
ttt ggc ccc ttc ttc cga acc aac cag att ttt gtg aca gct aag aac	1248
Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Lys Asn	
405 410 415	
agg tcc agc tac aag tac gac tcc ctg ctg cta ggg ccc aag aac ttc	1296
Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe	
420 425 430	
agt ggg atc cta tcc ctg gac ttg ctg cag gag ctg ttg gag cta cag	1344
Ser Gly Ile Leu Ser Leu Asp Leu Leu Gln Glu Leu Leu Glu Leu Gln	
435 440 445	
gag aga ctt cga cac ctg caa gtg tgg tcc cat gag gca cag cgc aac	1392
Glu Arg Leu Arg His Leu Gln Val Trp Ser His Glu Ala Gln Arg Asn	
450 455 460	
atc tcc ctc cag gac atc tgc tat gct ccc ctc aac ccg cat aac acc	1440
Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro His Asn Thr	
465 470 475 480	
agc ctc act gac tgc tgt gtc aac agc ctc ctt caa tac ttc cag aac	1488
Ser Leu Thr Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn	
485 490 495	
aac cac aca ctc ctg ctg ctc aca gcc aat cag act ctg aat ggc cag	1536
Asn His Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln	
500 505 510	
acc tcc ctg gtg gac tgg aag gac cat ttc ctc tac tgt gcc aat gcc	1584
Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala	
515 520 525	
cct ctc acg tac aaa gat ggc aca gcc ctg gcc ctg agc tgc ata gct	1632
Pro Leu Thr Tyr Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Ile Ala	
530 535 540	
gac tac ggg gca cct gtc ttc ccc ttc ctt gct gtt ggg ggc tac caa	1680
Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln	
545 550 555 560	
ggg acg gac tac tcg gag gca gaa gcc ctg atc ata acc ttc tct atc	1728
Gly Thr Asp Tyr Ser Glu Ala Glu Ala Leu Ile Ile Thr Phe Ser Ile	
565 570 575	
aat aac tac ccc gct gat gat ccc cgc atg gcc cac gcc aag ctc tgg	1776
Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala His Ala Lys Leu Trp	
580 585 590	
gag gag gct ttc ttg aag gaa atg caa tcc ttc cag aga agc aca gct	1824

Glu	Glu	Ala	Phe	Leu	Lys	Glu	Met	Gln	Ser	Phe	Gln	Arg	Ser	Thr	Ala		
		595					600					605					
gac	aag	ttc	cag	att	gcg	ttc	tca	gct	gag	cgt	tct	ctg	gag	gac	gag	1872	
Asp	Lys	Phe	Gln	Ile	Ala	Phe	Ser	Ala	Glu	Arg	Ser	Leu	Glu	Asp	Glu		
	610					615					620						
atc	aat	cgc	act	acc	atc	cag	gac	ctg	cct	gtc	ttt	gcc	atc	agc	tac	1920	
Ile	Asn	Arg	Thr	Thr	Ile	Gln	Asp	Leu	Pro	Val	Phe	Ala	Ile	Ser	Tyr		
625					630					635					640		
ctt	atc	gtc	ttc	ctg	tac	atc	tcc	ctg	gcc	ctg	ggc	agc	tac	tcc	aga	1968	
Leu	Ile	Val	Phe	Leu	Tyr	Ile	Ser	Leu	Ala	Leu	Gly	Ser	Tyr	Ser	Arg		
				645					650					655			
tgg	agc	cga	gtt	gcg	gtg	gat	tcc	aag	gct	act	ctg	ggc	cta	ggg	ggg	2016	
Trp	Ser	Arg	Val	Ala	Val	Asp	Ser	Lys	Ala	Thr	Leu	Gly	Leu	Gly	Gly		
			660					665					670				
gtg	gct	gtt	gtg	ctg	gga	gca	gtc	gtc	gct	gcc	atg	ggc	ttc	tac	tcc	2064	
Val	Ala	Val	Val	Leu	Gly	Ala	Val	Val	Ala	Ala	Met	Gly	Phe	Tyr	Ser		
		675					680					685					
tac	ctg	ggg	gtc	ccc	tcc	tct	ctg	gtc	atc	att	caa	gtg	gta	cct	ttc	2112	
Tyr	Leu	Gly	Val	Pro	Ser	Ser	Leu	Val	Ile	Ile	Gln	Val	Val	Pro	Phe		
	690					695					700						
ctg	gtg	ctg	gct	gtg	gga	gct	gac	aac	atc	ttc	atc	ttt	gtt	ctt	gag	2160	
Leu	Val	Leu	Ala	Val	Gly	Ala	Asp	Asn	Ile	Phe	Ile	Phe	Val	Leu	Glu		
705					710					715					720		
tac	cag	agg	ctg	cct	agg	atg	ccc	ggg	gag	cag	cga	gag	gct	cac	att	2208	
Tyr	Gln	Arg	Leu	Pro	Arg	Met	Pro	Gly	Glu	Gln	Arg	Glu	Ala	His	Ile		
				725					730					735			
ggc	cgc	acc	ctg	ggg	agt	gtg	gcc	ccc	agc	atg	ctg	ctg	tgc	agc	ctc	2256	
Gly	Arg	Thr	Leu	Gly	Ser	Val	Ala	Pro	Ser	Met	Leu	Leu	Cys	Ser	Leu		
			740					745					750				
tct	gag	gcc	atc	tgc	ttc	ttt	cta	ggg	gcc	ctg	acc	tcc	atg	cca	gct	2304	
Ser	Glu	Ala	Ile	Cys	Phe	Phe	Leu	Gly	Ala	Leu	Thr	Ser	Met	Pro	Ala		
		755					760					765					
gtg	agg	acc	ttt	gcc	ttg	acc	tct	ggc	tta	gca	atc	atc	ttt	gac	ttc	2352	
Val	Arg	Thr	Phe	Ala	Leu	Thr	Ser	Gly	Leu	Ala	Ile	Ile	Phe	Asp	Phe		
	770					775					780						
ctg	ctc	cag	atg	aca	gcc	ttt	gtg	gcc	ctg	ctc	tcc	ctg	gat	agc	aag	2400	
Leu	Leu	Gln	Met	Thr	Ala	Phe	Val	Ala	Leu	Leu	Ser	Leu	Asp	Ser	Lys		
785					790					795					800		
agg	cag	gag	gcc	tct	cgc	ccc	gac	gtc	gtg	tgc	tgc	ttt	tca	agc	cga	2448	
Arg	Gln	Glu	Ala	Ser	Arg	Pro	Asp	Val	Val	Cys	Cys	Phe	Ser	Ser	Arg		
				805					810					815			
aat	ctg	ccc	cca	ccg	aaa	caa	aaa	gaa	ggc	ctc	tta	ctt	tgc	ttc	ttc	2496	
Asn	Leu	Pro	Pro	Pro	Lys	Gln	Lys	Glu	Gly	Leu	Leu	Leu	Cys	Phe	Phe		
			820					825					830				
cgc	aag	ata	tac	act	ccc	ttc	ctg	ctg	cac	aga	ttc	atc	cgc	cct	gtt	2544	
Arg	Lys	Ile	Tyr	Thr	Pro	Phe	Leu	Leu	His	Arg	Phe	Ile	Arg	Pro	Val		

835					840					845							
gtg	ctg	ctg	ctc	ttt	ctg	gtc	ctg	ttt	gga	gca	aac	ctc	tac	tta	atg	2592	
Val	Leu	Leu	Leu	Phe	Leu	Val	Leu	Phe	Gly	Ala	Asn	Leu	Tyr	Leu	Met		
850					855					860							
tgc	aac	atc	agc	gtg	ggg	ctg	gac	cag	gat	ctg	gct	ctg	ccc	aag	gat	2640	
Cys	Asn	Ile	Ser	Val	Gly	Leu	Asp	Gln	Asp	Leu	Ala	Leu	Pro	Lys	Asp		
865					870					875					880		
tcc	tac	ctg	ata	gac	tac	ttc	ctc	ttt	ctg	aac	cgg	tac	ttg	gaa	gtg	2688	
Ser	Tyr	Leu	Ile	Asp	Tyr	Phe	Leu	Phe	Leu	Asn	Arg	Tyr	Leu	Glu	Val		
885					890					895							
ggg	cct	cca	gtg	tac	ttt	gac	acc	acc	tca	ggc	tac	aac	ttt	tcc	acc	2736	
Gly	Pro	Pro	Val	Tyr	Phe	Asp	Thr	Thr	Ser	Gly	Tyr	Asn	Phe	Ser	Thr		
900					905					910							
gag	gca	ggc	atg	aac	gcc	att	tgc	tct	agt	gca	ggc	tgt	gag	agc	ttc	2784	
Glu	Ala	Gly	Met	Asn	Ala	Ile	Cys	Ser	Ser	Ala	Gly	Cys	Glu	Ser	Phe		
915					920					925							
tcc	cta	acc	cag	aaa	atc	cag	tat	gcc	agt	gaa	ttc	cct	aat	cag	tct	2832	
Ser	Leu	Thr	Gln	Lys	Ile	Gln	Tyr	Ala	Ser	Glu	Phe	Pro	Asn	Gln	Ser		
930					935					940							
tat	gtg	gct	att	gct	gca	tcc	tcc	tgg	gta	gat	gac	ttc	atc	gac	tgg	2880	
Tyr	Val	Ala	Ile	Ala	Ala	Ser	Ser	Trp	Val	Asp	Asp	Phe	Ile	Asp	Trp		
945					950					955					960		
ctg	acc	cca	tcc	tcc	tcc	tgc	tgc	cgc	att	tat	acc	cgt	ggc	ccc	cat	2928	
Leu	Thr	Pro	Ser	Ser	Ser	Cys	Cys	Arg	Ile	Tyr	Thr	Arg	Gly	Pro	His		
965					970					975							
aaa	gat	gag	ttc	tgt	ccc	tca	acg	gat	act	tcc	ttc	aac	tgt	ctc	aaa	2976	
Lys	Asp	Glu	Phe	Cys	Pro	Ser	Thr	Asp	Thr	Ser	Phe	Asn	Cys	Leu	Lys		
980					985					990							
aac	tgc	atg	aac	cgc	act	ctg	ggg	ccc	gtg	aga	ccc	aca	aca	gaa	cag	3024	
Asn	Cys	Met	Asn	Arg	Thr	Leu	Gly	Pro	Val	Arg	Pro	Thr	Thr	Glu	Gln		
995					1000					1005							
ttt	cat	aag	tac	ctg	ccc	tgg	ttc	ctg	aat	gat	acg	ccc	aac	atc		3069	
Phe	His	Lys	Tyr	Leu	Pro	Trp	Phe	Leu	Asn	Asp	Thr	Pro	Asn	Ile			
1010					1015					1020							
aga	tgt	cct	aaa	ggg	ggc	cta	gca	gcg	tat	aga	acc	tct	gtg	aat		3114	
Arg	Cys	Pro	Lys	Gly	Gly	Leu	Ala	Ala	Tyr	Arg	Thr	Ser	Val	Asn			
1025					1030					1035							
ttg	agc	tca	gat	ggc	cag	att	ata	gcc	tcc	cag	ttc	atg	gcc	tac		3159	
Leu	Ser	Ser	Asp	Gly	Gln	Ile	Ile	Ala	Ser	Gln	Phe	Met	Ala	Tyr			
1040					1045					1050							
cac	aag	ccc	tta	cgg	aac	tca	cag	gac	ttt	aca	gaa	gct	ctc	cgg		3204	
His	Lys	Pro	Leu	Arg	Asn	Ser	Gln	Asp	Phe	Thr	Glu	Ala	Leu	Arg			
1055					1060					1065							
gca	tcc	cgg	ttg	cta	gca	gcc	aac	atc	aca	gct	gaa	cta	cgg	aag		3249	
Ala	Ser	Arg	Leu	Leu	Ala	Ala	Asn	Ile	Thr	Ala	Glu	Leu	Arg	Lys			
1070					1075					1080							

gtg cct	ggg aca	gat ccc	aac	ttt gag	gtc ttc	cct	tac acg	atc	3294
Val Pro	Gly Thr	Asp Pro	Asn	Phe Glu	Val Phe	Pro	Tyr Thr	Ile	
1085			1090			1095			
tcc aat	gtg ttc	tac cag	caa	tac ctg	acg gtt	ctc	cct gag	gga	3339
Ser Asn	Val Phe	Tyr Gln	Gln	Tyr Leu	Thr Val	Leu	Pro Glu	Gly	
1100			1105			1110			
atc ttc	act ctt	gct ctc	tgc	ttc gtg	ccc acc	ttt	gtg gtc	tgc	3384
Ile Phe	Thr Leu	Ala Leu	Cys	Phe Val	Pro Thr	Phe	Val Val	Cys	
1115			1120			1125			
tac ctc	cta ctg	ggc ctg	gac	ata cgc	tca ggc	atc	ctc aac	ctg	3429
Tyr Leu	Leu Leu	Gly Leu	Asp	Ile Arg	Ser Gly	Ile	Leu Asn	Leu	
1130			1135			1140			
ctc tcc	atc att	atg atc	ctc	gtg gac	acc atc	ggc	ctc atg	gct	3474
Leu Ser	Ile Ile	Met Ile	Leu	Val Asp	Thr Ile	Gly	Leu Met	Ala	
1145			1150			1155			
gtg tgg	ggt atc	agc tac	aat	gct gtg	tcc ctc	atc	aac ctt	gtc	3519
Val Trp	Gly Ile	Ser Tyr	Asn	Ala Val	Ser Leu	Ile	Asn Leu	Val	
1160			1165			1170			
acg gca	gtg ggc	atg tct	gtg	gag ttc	gtg tcc	cac	att acc	cgg	3564
Thr Ala	Val Gly	Met Ser	Val	Glu Phe	Val Ser	His	Ile Thr	Arg	
1175			1180			1185			
tcc ttt	gct gta	agc acc	aag	cct acc	cgg ctg	gag	aga gcc	aaa	3609
Ser Phe	Ala Val	Ser Thr	Lys	Pro Thr	Arg Leu	Glu	Arg Ala	Lys	
1190			1195			1200			
gat gct	act atc	ttc atg	ggc	agt gcg	gtg ttt	gct	gga gtg	gcc	3654
Asp Ala	Thr Ile	Phe Met	Gly	Ser Ala	Val Phe	Ala	Gly Val	Ala	
1205			1210			1215			
atg acc	aac ttc	ccg ggc	atc	ctc atc	ctg ggc	ttt	gct cag	gcc	3699
Met Thr	Asn Phe	Pro Gly	Ile	Leu Ile	Leu Gly	Phe	Ala Gln	Ala	
1220			1225			1230			
cag ctt	atc cag	att ttc	ttc	ttc cgc	ctc aac	ctc	ctg atc	acc	3744
Gln Leu	Ile Gln	Ile Phe	Phe	Phe Arg	Leu Asn	Leu	Leu Ile	Thr	
1235			1240			1245			
ttg ctg	ggt ctg	cta cac	ggc	ctg gtc	ttc ctg	ccc	gtt gtc	ctc	3789
Leu Leu	Gly Leu	Leu His	Gly	Leu Val	Phe Leu	Pro	Val Val	Leu	
1250			1255			1260			
agc tat	ctg ggg	cca gat	gtt	aac caa	gct ctg	gta	ctg gag	gag	3834
Ser Tyr	Leu Gly	Pro Asp	Val	Asn Gln	Ala Leu	Val	Leu Glu	Glu	
1265			1270			1275			
aaa cta	gcc act	gag gca	gcc	atg gtc	tca gag	cct	tct tgc	cca	3879
Lys Leu	Ala Thr	Glu Ala	Ala	Met Val	Ser Glu	Pro	Ser Cys	Pro	
1280			1285			1290			
cag tac	ccc ttc	ccg gct	gat	gca aac	acc agt	gac	tat gtt	aac	3924
Gln Tyr	Pro Phe	Pro Ala	Asp	Ala Asn	Thr Ser	Asp	Tyr Val	Asn	
1295			1300			1305			

tac ggc ttt aat cca gaa ttt atc cct gaa att aat gct gct agc 3969
 Tyr Gly Phe Asn Pro Glu Phe Ile Pro Glu Ile Asn Ala Ala Ser
 1310 1315 1320

agc tct ctg ccc aaa agt gac caa aag ttc taa 4002
 Ser Ser Leu Pro Lys Ser Asp Gln Lys Phe
 1325 1330

<210> 12

<211> 1333

<212> PRT

<213> Mus sp.

<400> 12

Met Ala Ala Ala Trp Gln Gly Trp Leu Leu Trp Ala Leu Leu Leu Asn
 1 5 10 15

Ser Ala Gln Gly Glu Leu Tyr Thr Pro Thr His Lys Ala Gly Phe Cys
 20 25 30

Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu
 35 40 45

Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His
 50 55 60

Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu
 65 70 75 80

Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu
 85 90 95

Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
 100 105 110

Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr
 115 120 125

Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Gln
 130 135 140

Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
 145 150 155 160

Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg
165 170 175
Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
180 185 190
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
195 200 205
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
210 215 220
Pro Gly Gln Ala Leu Ala Asp Gly Met Lys Pro Leu Asp Gly Lys Ile
225 230 235 240
Thr Pro Cys Asn Glu Ser Gln Gly Glu Asp Ser Ala Ala Cys Ser Cys
245 250 255
Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Pro Ala Leu
260 265 270
Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile
275 280 285
Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Val Val Leu Val Tyr
290 295 300
Leu Arg Val Ala Ser Asn Arg Asn Lys Asn Lys Thr Ala Gly Ser Gln
305 310 315 320
Glu Ala Pro Asn Leu Pro Arg Lys Arg Arg Phe Ser Pro His Thr Val
325 330 335
Leu Gly Arg Phe Phe Glu Ser Trp Gly Thr Arg Val Ala Ser Trp Pro
340 345 350
Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ser Val
355 360 365
Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
370 375 380
Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ala Phe His Asp Glu His
385 390 395 400
Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Lys Asn

				405						410						415
Arg	Ser	Ser	Tyr	Lys	Tyr	Asp	Ser	Leu	Leu	Leu	Gly	Pro	Lys	Asn	Phe	
			420					425					430			
Ser	Gly	Ile	Leu	Ser	Leu	Asp	Leu	Leu	Gln	Glu	Leu	Leu	Glu	Leu	Gln	
		435					440					445				
Glu	Arg	Leu	Arg	His	Leu	Gln	Val	Trp	Ser	His	Glu	Ala	Gln	Arg	Asn	
	450					455					460					
Ile	Ser	Leu	Gln	Asp	Ile	Cys	Tyr	Ala	Pro	Leu	Asn	Pro	His	Asn	Thr	
465					470					475					480	
Ser	Leu	Thr	Asp	Cys	Cys	Val	Asn	Ser	Leu	Leu	Gln	Tyr	Phe	Gln	Asn	
				485					490					495		
Asn	His	Thr	Leu	Leu	Leu	Leu	Thr	Ala	Asn	Gln	Thr	Leu	Asn	Gly	Gln	
			500					505					510			
Thr	Ser	Leu	Val	Asp	Trp	Lys	Asp	His	Phe	Leu	Tyr	Cys	Ala	Asn	Ala	
		515					520					525				
Pro	Leu	Thr	Tyr	Lys	Asp	Gly	Thr	Ala	Leu	Ala	Leu	Ser	Cys	Ile	Ala	
	530					535					540					
Asp	Tyr	Gly	Ala	Pro	Val	Phe	Pro	Phe	Leu	Ala	Val	Gly	Gly	Tyr	Gln	
545					550					555					560	
Gly	Thr	Asp	Tyr	Ser	Glu	Ala	Glu	Ala	Leu	Ile	Ile	Thr	Phe	Ser	Ile	
				565					570					575		
Asn	Asn	Tyr	Pro	Ala	Asp	Asp	Pro	Arg	Met	Ala	His	Ala	Lys	Leu	Trp	
			580					585					590			
Glu	Glu	Ala	Phe	Leu	Lys	Glu	Met	Gln	Ser	Phe	Gln	Arg	Ser	Thr	Ala	
		595					600					605				
Asp	Lys	Phe	Gln	Ile	Ala	Phe	Ser	Ala	Glu	Arg	Ser	Leu	Glu	Asp	Glu	
	610					615					620					
Ile	Asn	Arg	Thr	Thr	Ile	Gln	Asp	Leu	Pro	Val	Phe	Ala	Ile	Ser	Tyr	
625					630					635					640	
Leu	Ile	Val	Phe	Leu	Tyr	Ile	Ser	Leu	Ala	Leu	Gly	Ser	Tyr	Ser	Arg	
				645					650					655		

Trp Ser Arg Val Ala Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
 660 665 670

Val Ala Val Val Leu Gly Ala Val Val Ala Ala Met Gly Phe Tyr Ser
 675 680 685

Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
 690 695 700

Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
 705 710 715 720

Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile
 725 730 735

Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu
 740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Ser Met Pro Ala
 755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Phe Asp Phe
 770 775 780

Leu Leu Gln Met Thr Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
 785 790 795 800

Arg Gln Glu Ala Ser Arg Pro Asp Val Val Cys Cys Phe Ser Ser Arg
 805 810 815

Asn Leu Pro Pro Pro Lys Gln Lys Glu Gly Leu Leu Leu Cys Phe Phe
 820 825 830

Arg Lys Ile Tyr Thr Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val
 835 840 845

Val Leu Leu Leu Phe Leu Val Leu Phe Gly Ala Asn Leu Tyr Leu Met
 850 855 860

Cys Asn Ile Ser Val Gly Leu Asp Gln Asp Leu Ala Leu Pro Lys Asp
 865 870 875 880

Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
 885 890 895

Gly Pro Pro Val Tyr Phe Asp Thr Thr Ser Gly Tyr Asn Phe Ser Thr
 900 905 910

Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Glu Ser Phe
 915 920 925

Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asn Gln Ser
 930 935 940

Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
 945 950 955 960

Leu Thr Pro Ser Ser Ser Cys Cys Arg Ile Tyr Thr Arg Gly Pro His
 965 970 975

Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys
 980 985 990

Asn Cys Met Asn Arg Thr Leu Gly Pro Val Arg Pro Thr Thr Glu Gln
 995 1000 1005

Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Thr Pro Asn Ile
 1010 1015 1020

Arg Cys Pro Lys Gly Gly Leu Ala Ala Tyr Arg Thr Ser Val Asn
 1025 1030 1035

Leu Ser Ser Asp Gly Gln Ile Ile Ala Ser Gln Phe Met Ala Tyr
 1040 1045 1050

His Lys Pro Leu Arg Asn Ser Gln Asp Phe Thr Glu Ala Leu Arg
 1055 1060 1065

Ala Ser Arg Leu Leu Ala Ala Asn Ile Thr Ala Glu Leu Arg Lys
 1070 1075 1080

Val Pro Gly Thr Asp Pro Asn Phe Glu Val Phe Pro Tyr Thr Ile
 1085 1090 1095

Ser Asn Val Phe Tyr Gln Gln Tyr Leu Thr Val Leu Pro Glu Gly
 1100 1105 1110

Ile Phe Thr Leu Ala Leu Cys Phe Val Pro Thr Phe Val Val Cys
 1115 1120 1125

Tyr	Leu	Leu	Leu	Gly	Leu	Asp	Ile	Arg	Ser	Gly	Ile	Leu	Asn	Leu
	1130					1135					1140			
Leu	Ser	Ile	Ile	Met	Ile	Leu	Val	Asp	Thr	Ile	Gly	Leu	Met	Ala
	1145					1150					1155			
Val	Trp	Gly	Ile	Ser	Tyr	Asn	Ala	Val	Ser	Leu	Ile	Asn	Leu	Val
	1160					1165					1170			
Thr	Ala	Val	Gly	Met	Ser	Val	Glu	Phe	Val	Ser	His	Ile	Thr	Arg
	1175					1180					1185			
Ser	Phe	Ala	Val	Ser	Thr	Lys	Pro	Thr	Arg	Leu	Glu	Arg	Ala	Lys
	1190					1195					1200			
Asp	Ala	Thr	Ile	Phe	Met	Gly	Ser	Ala	Val	Phe	Ala	Gly	Val	Ala
	1205					1210					1215			
Met	Thr	Asn	Phe	Pro	Gly	Ile	Leu	Ile	Leu	Gly	Phe	Ala	Gln	Ala
	1220					1225					1230			
Gln	Leu	Ile	Gln	Ile	Phe	Phe	Phe	Arg	Leu	Asn	Leu	Leu	Ile	Thr
	1235					1240					1245			
Leu	Leu	Gly	Leu	Leu	His	Gly	Leu	Val	Phe	Leu	Pro	Val	Val	Leu
	1250					1255					1260			
Ser	Tyr	Leu	Gly	Pro	Asp	Val	Asn	Gln	Ala	Leu	Val	Leu	Glu	Glu
	1265					1270					1275			
Lys	Leu	Ala	Thr	Glu	Ala	Ala	Met	Val	Ser	Glu	Pro	Ser	Cys	Pro
	1280					1285					1290			
Gln	Tyr	Pro	Phe	Pro	Ala	Asp	Ala	Asn	Thr	Ser	Asp	Tyr	Val	Asn
	1295					1300					1305			
Tyr	Gly	Phe	Asn	Pro	Glu	Phe	Ile	Pro	Glu	Ile	Asn	Ala	Ala	Ser
	1310					1315					1320			
Ser	Ser	Leu	Pro	Lys	Ser	Asp	Gln	Lys	Phe					
	1325					1330								

<210> 13

<211> 3999

<212> DNA

<213> Mus sp.

<220>

<221> misc_feature

<222> (1)..(3999)

<223> n is g or a or t or c

<400> 13

atggcngcng cntggcargg ntggytnytn tgggcnytny tnytnaayws ngcncarggn	60
garytntaya cncnacnca yaargcnggn ttytgyacnt tytaygarga rtgyggnaar	120
aayccngary tnwsnggngg nytnacnwsn ytnwsnaaya thwsntgyyt nwsnaayacn	180
ccngcnmgnc aygtnacngg ngaycayytn gcnytnytn armngtntg yccnmgnytn	240
tayaayggnc cnaaygayac ntaygcntgy tgywsnacna arcarytngt nwsnytngay	300
wsnwsnytnw snathacnaa rgcnynytn acnmngtgyc cngcntgyws ngaraaytty	360
gtwnsnathc aytgycayaa yacntgywsn ccngaycarw snytnttyat haaygtnacn	420
mgngtngtnc armnggaycc nggncarytn ccngcngtng tngcntayga rgcnttytay	480
carmgnwsnt tygcngaraa rgcntaygar wsntgywsnm gngtnmgntat hccngcngcn	540
gcnwsnytn gngtnggnws natgtgyggn gtntayggngw sngcnytn tg yaaygcncar	600
mgntggytna ayttycargg ngayacnggn aayggnytn cncnytn ga yathacntty	660
cayytnytn arccnggnca rgcnytngcn gayggngatga arccnytn ga yggnaarath	720
acncntgya aygarwsnca rggngargay wsngcngcnt gywsntgyca rgaytgygcn	780
gcnwsntgyc cngtnathcc nccncncncn gcnytnmgnc cnwsnttyta yatggngmgn	840
atgccnggnt ggytngcnyt nathathath ttyacngcng tnttygtny nytnwsngtn	900
gtnytngtnt ayytnmgnt ngcnwsnaay mgnaayaara ayaaracngc nggnwsncar	960
gargncnca ayytnccnm naarmngmgn ttywsnccnc ayacngtny nggnmgntty	1020
ttygarwsnt ggggnacnm ngtnngcnwsn tggccnytna cngtnytn gc nytnwsntty	1080
athgtngtna thgcnytnws ngtnngnytn acnttyathg arytnacnac ngayccngtn	1140
garytntggw sngcncnca rwsncargcn mgnaargara argcnttyca ygaygarca	1200
ttyggncnt tyttymgnac naaycarath ttygtnacng cnaaraaymg nwsnwsntay	1260
aartaygayw snytnytny nggnccnaar aayttywsng gnathytnws nytngayytn	1320
ytnccargary tnytngaryt ncargarmgn ytnmgncayy tncargtntg gwsncaygar	1380

gcncarmgna	ayathwsnyt	ncargayath	tgytaygcnc	cnytnaaycc	ncayaayaen	1440
wsnytnacng	aytgytgygt	naaywsnytn	ytncartayt	tycaraayaa	ycayacnytn	1500
ytnytnytna	cngcnaayca	racnytnaay	ggncaracnw	snytngtnga	ytggaargay	1560
cayttyytnt	aytgygcnaa	ygcncncytn	acntayaarg	ayggnacngc	nytngcnytn	1620
wsntgyathg	cngaytaygg	ngcncngtn	ttyccnttyy	tngcngtngg	nggntaycar	1680
ggnacngayt	aywsngargc	ngargcnytn	athathacnt	tywsnathaa	yaaytayccn	1740
gcngaygayc	cnmgntatggc	ncaygcnaar	ytntgggarg	argcnttyyt	naargaratg	1800
carwsnttyc	armgnwsnac	ngcngayaar	ttycarathg	cnttywsngc	ngarmgnwsn	1860
ytnngargayg	arathaaymg	nacnacnath	cargayytnc	cngtnttygc	nathwsntay	1920
ytnathgtnt	tyytnatayt	hwsnytnngn	ytnggnwsnt	aywsnmngtg	gwsnmngtn	1980
gcngtngayw	snaargcnac	nytnngnytn	ggnggngtng	cngtngtnyt	nggngcngtn	2040
gtngcngcna	tgggnttyta	ywsntayytn	ggngtncnw	snwsnytngt	nathathcar	2100
gtngtncnt	tyytngtnyt	ngcngtnggn	gcngayaaya	thttyathtt	ygtnytngar	2160
taycarmgny	tnccnmgnat	gccngngar	carmgngarg	cncayathgg	nmgnacnytn	2220
ggnwsngtng	cncnwsnat	gytnytnngy	wsnytnwsng	argcnathtg	ytytytyytn	2280
ggngcnytna	cnwsnatgcc	ngcngtnmgn	acnttygcny	tnacnwsngg	nytngcnath	2340
athttygayt	tyytnytnca	ratgacngcn	ttygtngcny	tnytnwsnyt	ngaywsnaar	2400
mgncargarg	cnwsnmgncc	ngaygtngtn	tgytgyttyw	snwsnmgnaa	yytnccncn	2460
ccnaarcara	argarggnyt	nytnytnngy	ttytymgna	arathtayac	nccnttyytn	2520
ytncaymgnt	tyathmgnc	ngtngtynytn	ytnytnnttyy	tngtynytn	yggngcnaay	2580
ytnatayytna	tgtgyaayat	hwsngtnggn	ytngaycarg	ayytngcnyt	nccnaargay	2640
wsntayytna	thgaytaytt	yytnnttyytn	aaymgntayy	tngargtngg	nccncngtn	2700
tayttygaya	cnacnwsngg	ntayaaytty	wsnacngarg	cnggnatgaa	ygcnathtgy	2760
wsnwsngcng	gntgygarws	nttywsnytn	acncaraara	thcartaygc	nwsngartty	2820
ccnaaycarw	sntaygtngc	nathgcngcn	wsnwsntggg	tngaygaytt	yathgaytgg	2880
ytnacncnw	snwsnwsntg	ytgymgnath	tayacnmng	gnccncayaa	rgaygartty	2940
tgyccnwsna	cngayacnws	nttyaaytgy	ytnaaraayt	gyatgaaymg	nacnytnngn	3000
ccngtnmgnc	cnacnacnga	rcarttycay	aartayytnc	cntggtyyt	naaygayacn	3060
ccnaayathm	gntgyccnaa	rggnggnytn	gcngcntaym	gnacnwsngt	naayytnwsn	3120
wsngayggnc	arathathgc	nwsncartty	atggcntayc	ayaarccnyt	nmgnaaywsn	3180

cargayttya cngargcnyt nmngncnwsn mgnytnytng cngcnaayat hacngcngar	3240
ytnmgnaarg tnccnggnac ngayccnaay ttygargtnt tyccntayac nathwsnaay	3300
gtnttytayc arcartayyt nacngtnytn ccngarggna thttyacnyt ngcnytnthy	3360
ttygtncna cnttygtngt ntgytayytn ytnytnggny tngayathmg nwsnggnath	3420
ytnaayytny tnwsnathat hatgathytn gtngayacna thggnytnat ggcngtntgg	3480
ggcnathwsnt ayaaygcngt nwsnytnath ayytngtna cngcngtngg natgwsngtn	3540
garttygtnw snayathac nmgnwsntty gcngtnwsna cnaarccnac nmgnytnngar	3600
mgngcnaarg aygcnacnat httyatgggn wsgcngtnt tygcnggngt ngcnatgacn	3660
aayttyccng gnathytnat hytnggntty gcncargcnc arytnathca rathttytty	3720
ttymgnytna ayytnytnat hacnytnytn ggnytnytn ayggnytngt nttyytnccn	3780
gtngtnytnw sntayytnng nccngaygt n aycargcny tngtnytna rgaraarytn	3840
gcnacngarg cngcnatggt nwsngarccn wsntgyccnc artayccntt yccngcngay	3900
gcnaayacnw sngaytaygt naaytaygg n ttyaayccng arttyathcc ngarathaay	3960
gcngcnwsnw snwsnytncc naarwsngay caraartty	3999

<210> 14

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 14

tcttcaccct tgctctttgc

20

<210> 15

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 15
aatgatggag agtaggttga ggat 24

<210> 16

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 16
tgcccacctt tggtgtctgc taccta 26

<210> 17

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 17
atcgctgaca ggatgcagaa g 21

<210> 18

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 18
tcaggaggag caatgatctt ga 22

<210> 19

<211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer
 <400> 19
 agattactgc cctggctcct agcaccatta 30

 <210> 20
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer
 <400> 20
 atcctcatcc tgggctttgc 20

 <210> 21
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer
 <400> 21
 gcaaggtgat caggaggttg a 21

 <210> 22
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer
 <400> 22
 cccagcttat ccagattttc ttcttccgc 29

 <210> 23
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer
 <400> 23
 tcttcaccct tgctctttgc 20

 <210> 24
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer
 <400> 24
 aatgatggag agtaggttga ggat 24

 <210> 25
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer
 <400> 25

tgcccacctt tgttgtctgc tacc 24

<210> 26

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 26
agcacctgtc cactgaagat ttc 23

<210> 27

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 27
tggacgctga gcttcagttc t 21

<210> 28

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 28
cttctctgcg ctgcctcgat ggaa 24

<210> 29

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 29

agtaaaaagg gctcgagga t

21

<210> 30

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 30

ggcagctggt gacatcagag a

21

<210> 31

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 31

aggaggccat gcaggcctac tctga

25

<210> 32

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 32
gagtccacgg tcagtccatg t 21

<210> 33

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 33
ttatgaacaa caatgccaaag caa 23

<210> 34

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 34
agtccttagg tagtggctta gtccttgga gctc 34

<210> 35

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> probe

<400> 35
gtaatacgac tcactatagg gccctgacgg tccttcctga gggaatcttc ac 52

<210> 36

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> probe

<400> 36

gtaatacgcac tcactatagg gcctgggaag ttgggtcatgg ccactccagc

50

<210> 37

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> FLAG tag

<400> 37

Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 38

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> motif

<400> 38

Tyr Gln Arg Leu
1

<210> 39

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> antigen

<400> 39

Glu	Gln	Phe	His	Lys	Tyr	Leu	Pro	Trp	Phe	Leu	Asn	Asp	Pro	Pro	Asn
1				5					10					15	

Ile Arg Cys

<210> 40

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> antigen

<400> 40

Glu	Ala	Phe	Tyr	Gln	Arg	Ser	Phe	Ala	Glu	Lys	Ala	Tyr	Glu	Ser	Cys
1				5					10					15	

<210> 41

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> antigen

<400> 41

Gly	Gln	Thr	Ser	Leu	Val	Asp	Trp	Lys	Asp	His	Phe	Leu	Tyr	Cys
1				5					10					15

<210> 42

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> antigen

<400> 42

Cys Ala Asn Ala Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu
1 5 10 15

Ser

<210> 43

<211> 5092

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (57) .. (4136)

<223>

<400> 43

cttggctgtt cctgaggcct ggccctggctc cccgctgacc ccttcccaga cctggg atg 59
Met
1

gcg gag gcc ggc ctg agg ggc tgg ctg ctg tgg gcc ctg ctc ctg cgc 107
Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu Arg
5 10 15

ttg gcc cag agt gag cct tac aca acc atc cac cag cct ggc tac tgc 155
Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr Cys
20 25 30

gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc ctc 203
Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser Leu
35 40 45

atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc aag 251

Met	Thr	Leu	Ser	Asn	Val	Ser	Cys	Leu	Ser	Asn	Thr	Pro	Ala	Arg	Lys	
50					55					60					65	
atc	aca	ggt	gat	cac	ctg	atc	cta	tta	cag	aag	atc	tgc	ccc	cgc	ctc	299
Ile	Thr	Gly	Asp	His	Leu	Ile	Leu	Leu	Gln	Lys	Ile	Cys	Pro	Arg	Leu	
				70					75					80		
tac	acc	ggc	ccc	aac	acc	caa	gcc	tgc	tgc	tcc	gcc	aag	cag	ctg	gta	347
Tyr	Thr	Gly	Pro	Asn	Thr	Gln	Ala	Cys	Cys	Ser	Ala	Lys	Gln	Leu	Val	
			85					90					95			
tca	ctg	gaa	gcg	agt	ctg	tcg	atc	acc	aag	gcc	ctc	ctc	acc	cgc	tgc	395
Ser	Leu	Glu	Ala	Ser	Leu	Ser	Ile	Thr	Lys	Ala	Leu	Leu	Thr	Arg	Cys	
		100					105					110				
cca	gcc	tgc	tct	gac	aat	ttt	gtg	aac	ctg	cac	tgc	cac	aac	acg	tgc	443
Pro	Ala	Cys	Ser	Asp	Asn	Phe	Val	Asn	Leu	His	Cys	His	Asn	Thr	Cys	
	115					120					125					
agc	ccc	aat	cag	agc	ctc	ttc	atc	aat	gtg	acc	cgc	gtg	gcc	cag	cta	491
Ser	Pro	Asn	Gln	Ser	Leu	Phe	Ile	Asn	Val	Thr	Arg	Val	Ala	Gln	Leu	
130					135					140					145	
ggg	gct	gga	caa	ctc	cca	gct	gtg	gtg	gcc	tat	gag	gcc	ttc	tac	cag	539
Gly	Ala	Gly	Gln	Leu	Pro	Ala	Val	Val	Ala	Tyr	Glu	Ala	Phe	Tyr	Gln	
			150						155					160		
cat	agc	ttt	gcc	gag	cag	agc	tat	gac	tcc	tgc	agc	cgt	gtg	cgc	gtc	587
His	Ser	Phe	Ala	Glu	Gln	Ser	Tyr	Asp	Ser	Cys	Ser	Arg	Val	Arg	Val	
			165					170					175			
cct	gca	gct	gcc	acg	ctg	gct	gtg	ggc	acc	atg	tgt	ggc	gtg	tat	ggc	635
Pro	Ala	Ala	Ala	Thr	Leu	Ala	Val	Gly	Thr	Met	Cys	Gly	Val	Tyr	Gly	
		180					185					190				
tct	gcc	ctt	tgc	aat	gcc	cag	cgc	tgg	ctc	aac	ttc	cag	gga	gac	aca	683
Ser	Ala	Leu	Cys	Asn	Ala	Gln	Arg	Trp	Leu	Asn	Phe	Gln	Gly	Asp	Thr	
	195					200					205					
ggc	aat	ggt	ctg	gcc	cca	ctg	gac	atc	acc	ttc	cac	ctc	ttg	gag	cct	731
Gly	Asn	Gly	Leu	Ala	Pro	Leu	Asp	Ile	Thr	Phe	His	Leu	Leu	Glu	Pro	
210					215					220					225	
ggc	cag	gcc	gtg	ggg	agt	ggg	att	cag	cct	ctg	aat	gag	ggg	gtt	gca	779
Gly	Gln	Ala	Val	Gly	Ser	Gly	Ile	Gln	Pro	Leu	Asn	Glu	Gly	Val	Ala	
				230					235					240		
cgt	tgc	aat	gag	tcc	caa	ggt	gac	gac	gtg	gcg	acc	tgc	tcc	tgc	caa	827
Arg	Cys	Asn	Glu	Ser	Gln	Gly	Asp	Asp	Val	Ala	Thr	Cys	Ser	Cys	Gln	
			245					250						255		
gac	tgt	gct	gca	tcc	tgt	cct	gcc	ata	gcc	cgc	ccc	cag	gcc	ctc	gac	875
Asp	Cys	Ala	Ala	Ser	Cys	Pro	Ala	Ile	Ala	Arg	Pro	Gln	Ala	Leu	Asp	
		260					265					270				
tcc	acc	ttc	tac	ctg	ggc	cag	atg	ccg	ggc	agt	ctg	gtc	ctc	atc	atc	923
Ser	Thr	Phe	Tyr	Leu	Gly	Gln	Met	Pro	Gly	Ser	Leu	Val	Leu	Ile	Ile	
	275					280						285				
atc	ctc	tgc	tct	gtc	ttc	gct	gtg	gtc	acc	atc	ctg	ctt	gtg	gga	ttc	971
Ile	Leu	Cys	Ser	Val	Phe	Ala	Val	Val	Thr	Ile	Leu	Leu	Val	Gly	Phe	

290	295	300	305	
cgt gtg gcc ccc gcc agg gac aaa agc aag atg gtg gac ccc aag aag	Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys Lys	1019		
	310 315 320			
ggc acc agc ctc tct gac aag ctc agc ttc tcc acc cac acc ctc ctt	Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu Leu	1067		
	325 330 335			
ggc cag ttc ttc cag ggc tgg ggc acg tgg gtg gct tcg tgg cct ctg	Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro Leu	1115		
	340 345 350			
acc atc ttg gtg cta tct gtc atc ccg gtg gtg gcc ttg gca gcg ggc	Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala Gly	1163		
	355 360 365			
ctg gtc ttt aca gaa ctc act acg gac ccc gtg gag ctg tgg tcg gcc	Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser Ala	1211		
	370 375 380 385			
ccc aac agc caa gcc cgg agt gag aaa gct ttc cat gac cag cat ttc	Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His Phe	1259		
	390 395 400			
ggc ccc ttc ttc cga acc aac cag gtg atc ctg acg gct cct aac cgg	Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn Arg	1307		
	405 410 415			
tcc agc tac agg tat gac tct ctg ctg ctg ggg ccc aag aac ttc agc	Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe Ser	1355		
	420 425 430			
gga atc ctg gac ctg gac ttg ctg ctg gag ctg cta gag ctg cag gag	Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln Glu	1403		
	435 440 445			
agg ctg cgg cac ctc cag gta tgg tcg ccc gaa gca cag cgc aac atc	Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn Ile	1451		
	450 455 460 465			
tcc ctg cag gac atc tgc tac gcc ccc ctc aat ccg gac aat acc agt	Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr Ser	1499		
	470 475 480			
ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac aac	Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn Asn	1547		
	485 490 495			
cgc acg ctc ctg ctg ctc aca gcc aac cag aca ctg atg ggg cag acc	Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln Thr	1595		
	500 505 510			
tcc caa gtc gac tgg aag gac cat ttt ctg tac tgt gcc aat gcc ccg	Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala Pro	1643		
	515 520 525			
ctc acc ttc aag gat ggc aca gcc ctg gcc ctg agc tgc atg gct gac	Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala Asp	1691		
	530 535 540 545			

tac ggg gcc cct gtc ttc ccc ttc ctt gcc att ggg ggg tac aaa gga Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys Gly 550 555 560	1739
aag gac tat tct gag gca gag gcc ctg atc atg acg ttc tcc ctc aac Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu Asn 565 570 575	1787
aat tac cct gcc ggg gac ccc cgt ctg gcc cag gcc aag ctg tgg gag Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp Glu 580 585 590	1835
gag gcc ttc tta gag gaa atg cga gcc ttc cag cgt cgg atg gct ggc Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala Gly 595 600 605	1883
atg ttc cag gtc acg ttc atg gct gag cgc tct ctg gaa gac gag atc Met Phe Gln Val Thr Phe Met Ala Glu Arg Ser Leu Glu Asp Glu Ile 610 615 620 625	1931
aat cgc acc aca gct gaa gac ctg ccc atc ttt gcc acc agc tac att Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr Ile 630 635 640	1979
gtc ata ttc ctg tac atc tct ctg gcc ctg ggc agc tat tcc agc tgg Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser Trp 645 650 655	2027
agc cga gtg atg gtg gac tcc aag gcc acg ctg ggc ctc ggc ggg gtg Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly Val 660 665 670	2075
gcc gtg gtc ctg gga gca gtc atg gct gcc atg ggc ttc ttc tcc tac Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser Tyr 675 680 685	2123
ttg ggt atc cgc tcc tcc ctg gtc atc ctg caa gtg gtt cct ttc ctg Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe Leu 690 695 700 705	2171
gtg ctg tcc gtg ggg gct gat aac atc ttc atc ttt gtt ctc gag tac Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu Tyr 710 715 720	2219
cag agg ctg ccc cgg agg cct ggg gag cca cga gag gtc cac att ggg Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile Gly 725 730 735	2267
cga gcc cta ggc agg gtg gct ccc agc atg ctg ttg tgc agc ctc tct Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu Ser 740 745 750	2315
gag gcc atc tgc ttc ttc cta ggg gcc ctg acc ccc atg cca gct gtg Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala Val 755 760 765	2363
cgg acc ttt gcc ctg acc tct ggc ctt gca gtg atc ctt gac ttc ctc Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe Leu 770 775 780 785	2411

ctg cag atg tca gcc ttt gtg gcc ctg ctc tcc ctg gac agc aag agg	2459
Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys Arg	
790 795 800	
cag gag gcc tcc cgg ttg gac gtc tgc tgc tgt gtc aag ccc cag gag	2507
Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln Glu	
805 810 815	
ctg ccc ccg cct ggc cag gga gag ggg ctc ctg ctt ggc ttc ttc caa	2555
Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe Gln	
820 825 830	
aag gct tat gcc ccc ttc ctg ctg cac tgg atc act cga ggt gtt gtg	2603
Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val Val	
835 840 845	
ctg ctg ctg ttt ctc gcc ctg ttc gga gtg agc ctc tac tcc atg tgc	2651
Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met Cys	
850 855 860 865	
cac atc agc gtg gga ctg gac cag gag ctg gcc ctg ccc aag gac tcg	2699
His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp Ser	
870 875 880	
tac ctg ctt gac tat ttc ctc ttt ctg aac cgc tac ttc gag gtg ggg	2747
Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val Gly	
885 890 895	
gcc ccg gtg tac ttt gtt acc acc ttg ggc tac aac ttc tcc agc gag	2795
Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser Glu	
900 905 910	
gct ggg atg aat gcc atc tgc tcc agt gca ggc tgc aac aac ttc tcc	2843
Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe Ser	
915 920 925	
ttc acc cag aag atc cag tat gcc aca gag ttc cct gag cag tct tac	2891
Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser Tyr	
930 935 940 945	
ctg gcc atc cct gcc tcc tcc tgg gtg gat gac ttc att gac tgg ctg	2939
Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp Leu	
950 955 960	
acc ccg tcc tcc tgc tgc cgc ctt tat ata tct ggc ccc aat aag gac	2987
Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys Asp	
965 970 975	
aag ttc tgc ccc tcg acc gtc aac tct ctg aac tgc cta aag aac tgc	3035
Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn Cys	
980 985 990	
atg agc atc acg atg ggc tct gtg agg ccc tcg gtg gag cag ttc cat	3083
Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe His	
995 1000 1005	
aag tat ctt ccc tgg ttc ctg aac gac cgg ccc aac atc aaa tgt	3128
Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys Cys	
1010 1015 1020	
ccc aaa ggc ggc ctg gca gca tac agc acc tct gtg aac ttg act	3173

Pro 1025	Lys	Gly	Gly	Leu	Ala 1030	Ala	Tyr	Ser	Thr	Ser 1035	Val	Asn	Leu	Thr	
tca Ser 1040	gat Asp	ggc Gly	cag Gln	gtt Val	tta Leu 1045	gac Asp	aca Thr	gtt Val	gcc Ala	att Ile 1050	ctg Leu	tca Ser	ccc Pro	agg Arg	3218
ctg Leu 1055	gag Glu	tac Tyr	agt Ser	ggc Gly	aca Thr 1060	atc Ile	tcg Ser	gct Ala	cac His	tgc Cys 1065	aac Asn	ctc Leu	tac Tyr	ctc Leu	3263
ctg Leu 1070	gat Asp	tca Ser	gcc Ala	tcc Ser	agg Arg 1075	ttc Phe	atg Met	gcc Ala	tat Tyr	cac His 1080	aag Lys	ccc Pro	ctg Leu	aaa Lys	3308
aac Asn 1085	tca Ser	cag Gln	gat Asp	tac Tyr	aca Thr 1090	gaa Glu	gct Ala	ctg Leu	cgg Arg	gca Ala 1095	gct Ala	cga Arg	gag Glu	ctg Leu	3353
gca Ala 1100	gcc Ala	aac Asn	atc Ile	act Thr	gct Ala 1105	gac Asp	ctg Leu	cgg Arg	aaa Lys	gtg Val 1110	cct Pro	gga Gly	aca Thr	gac Asp	3398
ccg Pro 1115	gct Ala	ttt Phe	gag Glu	gtc Val	ttc Phe 1120	ccc Pro	tac Tyr	acg Thr	atc Ile	acc Thr 1125	aat Asn	gtg Val	ttt Phe	tat Tyr	3443
gag Glu 1130	cag Gln	tac Tyr	ctg Leu	acc Thr	atc Ile 1135	ctc Leu	cct Pro	gag Glu	ggg Gly	ctc Leu 1140	ttc Phe	atg Met	ctc Leu	agc Ser	3488
ctc Leu 1145	tgc Cys	ctt Leu	gtg Val	ccc Pro	acc Thr 1150	ttc Phe	gct Ala	gtc Val	tcc Ser	tgc Cys 1155	ctc Leu	ctg Leu	ctg Leu	ggc Gly	3533
ctg Leu 1160	gac Asp	ctg Leu	cgc Arg	tcc Ser	ggc Gly 1165	ctc Leu	ctc Leu	aac Asn	ctg Leu	ctc Leu 1170	tcc Ser	att Ile	gtc Val	atg Met	3578
atc Ile 1175	ctc Leu	gtg Val	gac Asp	act Thr	gtc Val 1180	ggc Gly	ttc Phe	atg Met	gcc Ala	ctg Leu 1185	tgg Trp	ggc Gly	atc Ile	agt Ser	3623
tac Tyr 1190	aat Asn	gct Ala	gtg Val	tcc Ser	ctc Leu 1195	atc Ile	aac Asn	ctg Leu	gtc Val	tcg Ser 1200	gcg Ala	gtg Val	ggc Gly	atg Met	3668
tct Ser 1205	gtg Val	gag Glu	ttt Phe	gtg Val	tcc Ser 1210	cac His	att Ile	acc Thr	cgc Arg	tcc Ser 1215	ttt Phe	gcc Ala	atc Ile	agc Ser	3713
acc Thr 1220	aag Lys	ccc Pro	acc Thr	tgg Trp	ctg Leu 1225	gag Glu	agg Arg	gcc Ala	aaa Lys	gag Glu 1230	gcc Ala	acc Thr	atc Ile	tct Ser	3758
atg Met 1235	gga Gly	agt Ser	gcg Ala	gtg Val	ttt Phe 1240	gca Ala	ggg Gly	gtg Val	gcc Ala	atg Met 1245	acc Thr	aac Asn	ctg Leu	cct Pro	3803
ggc Gly	atc Ile	ctt Leu	gtc Val	ctg Leu	ggc Gly	ctc Leu	gcc Ala	aag Lys	gcc Ala	cag Gln	ctc Leu	att Ile	cag Gln	atc Ile	3848

1250		1255		1260	
ttc ttc ttc cgc ctc aac ctc ctg atc act ctg ctg ggc ctg ctg					3893
Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu Leu Gly Leu Leu					
1265		1270		1275	
cat ggc ttg gtc ttc ctg ccc gtc atc ctc agc tac gtg ggg cct					3938
His Gly Leu Val Phe Leu Pro Val Ile Leu Ser Tyr Val Gly Pro					
1280		1285		1290	
gac gtt aac ccg gct ctg gca ctg gag cag aag cgg gct gag gag					3983
Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys Arg Ala Glu Glu					
1295		1300		1305	
gcg gtg gca gca gtc atg gtg gcc tct tgc cca aat cac ccc tcc					4028
Ala Val Ala Ala Val Met Val Ala Ser Cys Pro Asn His Pro Ser					
1310		1315		1320	
cga gtc tcc aca gct gac aac atc tat gtc aac cac agc ttt gaa					4073
Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn His Ser Phe Glu					
1325		1330		1335	
ggg tct atc aaa ggt gct ggt gcc atc agc aac ttc ttg ccc aac					4118
Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn Phe Leu Pro Asn					
1340		1345		1350	
aat ggg cgg cag ttc tga tacagccaga ggccctgtct aggctctatg					4166
Asn Gly Arg Gln Phe					
1355					
gccctgaacc aaaggggttat ggggatcttc cttgtgactg ccccttgaca cacgccctcc					4226
tcaaataccta ggggaggcca ttcccatgag actgcctgtc actggaggat ggccctgtct					4286
tgagggtatcc aggcagcacc actgatggct cctctgtctc catagtgggt cccagtttc					4346
caagtcacct aggccttggg cagtgcctcc tcttgggcct gggctctggaa gttggcagga					4406
acagacacac tccatgtttg tcccacactc actcactttc ctaggagccc acttctcatc					4466
caacttttcc cttctcagtt cctctctcga aagtcttaat tctgtgtcag taagtcttta					4526
acacgtagca gtgtccctga gaacacagac aatgaccact accctgggtg tgatatcaca					4586
ggaggccaga gagaggcaaa ggctcaggcc aagagccaac gctgtgggag gccggtcggc					4646
agccactccc tccagggcgc acctgcaggt ctgccatcca cggccttttc tggcaagaga					4706
agggccaggg aaggatgtc tcataaggcc caggaaggat gctctcataa gcaccttggg					4766
catggattag cccctcctgg aaaatggtgt tgggtttggg ctccagctcc aatacttatt					4826
aaggctgttg ctgccagtca aggccacca ggagtctgaa ggctgggagc tcttggggct					4886
gggctgttcc tcccatcttc acctcgggcc tggatcccag gcctcaaacc agcccaacct					4946
gagcttttgg acagctctcc agaagcatga actgcagtgg agatgaagat cctggctctg					5006
tgctgtgcac ataggtgttt aataaacatt tgttggcaga aaaaaaaaaa aaaaaaaaaa					5066
aaaaaaaaaa aaaaaaaaaa aaaaaa					5092

<210> 44

<211> 1359

<212> PRT

<213> Homo sapiens

<400> 44

Met Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu
1 5 10 15

Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr
20 25 30

Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
35 40 45

Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg
50 55 60

Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg
65 70 75 80

Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu
85 90 95

Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
100 105 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr
115 120 125

Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
130 135 140

Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145 150 155 160

Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
165 170 175

Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
 195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
 210 215 220

Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
 225 230 235 240

Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
 245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
 260 265 270

Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
 275 280 285

Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
 290 295 300

Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
 305 310 315 320

Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
 325 330 335

Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro
 340 345 350

Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
 355 360 365

Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
 370 375 380

Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
 385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
 405 410 415

Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
 420 425 430

Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
 435 440 445

Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
 450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
 465 470 475 480

Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
 485 490 495

Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
 500 505 510

Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
 515 520 525

Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
 530 535 540

Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
 545 550 555 560

Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
 565 570 575

Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
 580 585 590

Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
 595 600 605

Gly Met Phe Gln Val Thr Phe Met Ala Glu Arg Ser Leu Glu Asp Glu
 610 615 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
 625 630 635 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
 645 650 655

Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
 660 665 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser

675	680	685
Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe 690 695 700		
Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu 705 710 715 720		
Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile 725 730 735		
Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu 740 745 750		
Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala 755 760 765		
Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe 770 775 780		
Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys 785 790 795 800		
Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln 805 810 815		
Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe 820 825 830		
Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val 835 840 845		
Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met 850 855 860		
Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp 865 870 875 880		
Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val 885 890 895		
Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser 900 905 910		
Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe 915 920 925		

Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
 930 935 940

Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
 945 950 955 960

Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
 965 970 975

Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
 980 985 990

Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe
 995 1000 1005

His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys
 1010 1015 1020

Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu
 1025 1030 1035

Thr Ser Asp Gly Gln Val Leu Asp Thr Val Ala Ile Leu Ser Pro
 1040 1045 1050

Arg Leu Glu Tyr Ser Gly Thr Ile Ser Ala His Cys Asn Leu Tyr
 1055 1060 1065

Leu Leu Asp Ser Ala Ser Arg Phe Met Ala Tyr His Lys Pro Leu
 1070 1075 1080

Lys Asn Ser Gln Asp Tyr Thr Glu Ala Leu Arg Ala Ala Arg Glu
 1085 1090 1095

Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val Pro Gly Thr
 1100 1105 1110

Asp Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr Asn Val Phe
 1115 1120 1125

Tyr Glu Gln Tyr Leu Thr Ile Leu Pro Glu Gly Leu Phe Met Leu
 1130 1135 1140

Ser Leu Cys Leu Val Pro Thr Phe Ala Val Ser Cys Leu Leu Leu
 1145 1150 1155

Gly Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu Ser Ile Val
 1160 1165 1170

Met Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu Trp Gly Ile
 1175 1180 1185

Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser Ala Val Gly
 1190 1195 1200

Met Ser Val Glu Phe Val Ser His Ile Thr Arg Ser Phe Ala Ile
 1205 1210 1215

Ser Thr Lys Pro Thr Trp Leu Glu Arg Ala Lys Glu Ala Thr Ile
 1220 1225 1230

Ser Met Gly Ser Ala Val Phe Ala Gly Val Ala Met Thr Asn Leu
 1235 1240 1245

Pro Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln Leu Ile Gln
 1250 1255 1260

Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu Leu Gly Leu
 1265 1270 1275

Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser Tyr Val Gly
 1280 1285 1290

Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys Arg Ala Glu
 1295 1300 1305

Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro Asn His Pro
 1310 1315 1320

Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn His Ser Phe
 1325 1330 1335

Glu Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn Phe Leu Pro
 1340 1345 1350

Asn Asn Gly Arg Gln Phe
 1355

<210> 45

<211> 4471

<212> DNA

<213> Mus musculus

<400> 45

ggatcacttc	ctggctctgg	gatggcagct	gcctggcagg	gatggctgct	ctgggccctg	60
ctcctgaatt	cggcccaggg	tgagctctac	acacccactc	acaaagctgg	cttctgcacc	120
ttttatgaag	agtgtgggaa	gaaccagag	ctttctggag	gcctcacatc	actatccaat	180
atctcctgct	tgtctaatac	cccagccccg	ccatgtcaca	ggtgaccacc	tggctcttct	240
ccagcgcgtc	tgtccccgcc	tatacaatgg	ccccaatgac	acctatgcct	gttgctctac	300
caagcagctg	gtgtcattag	acagtagcct	gtctatcacc	aaggccctcc	ttacacgctg	360
cccggcatgc	tctgaaaatt	ttgtgagcat	acactgtcat	aatacctgca	gccctgacca	420
gagcctcttc	atcaatgtta	ctcgcgtggg	tcagcgggac	cctggacagc	ttcctgctgt	480
ggtggcctat	gaggcctttt	atcaacgcag	ttttgcagag	aaggcctatg	agtctcttag	540
ccgggtgctc	atccctgcag	ctgcctcgct	ggctgtgggc	agcatgtgtg	gagtgtatgg	600
ctctgccctc	tgcaatgctc	agcgcttggc	tcaacttcca	aggagacaca	gggaatggcc	660
tggctccgct	ggacatcacc	ttccacctct	tggagcctgg	ccaggccctg	gcagatggga	720
tgaagccact	ggatgggaag	atcaaaccct	gcaatgagtc	ccagggtgaa	gactcggcag	780
cctgttctctg	ccaggactgt	gcagcatcct	gccctgtcat	ccctccgccc	ccggccctgc	840
gcccttcttt	ctacatgggt	cgaatgccag	gctggctggc	tctcatcatc	atcttctactg	900
ctgtctttgt	attgctctct	gttgctcctt	tgtatctccg	agtggcttcc	aacaggaaca	960
agaacaagac	agcaggctcc	caggaagccc	ccaacctccc	tcgtaagcgc	agattctcac	1020
ctcacactgt	ccttggccgg	ttcttcgaga	gctggggaac	aatggtggcc	tcatggccac	1080
tcactgtctt	ggcactgtcc	ttcatagttg	tgatagcctt	gtcagtaggc	ctgaccttta	1140
tagaactcac	cacagaccct	gtggaactgt	ggtcggcccc	taaaagccaa	gcccggaaag	1200
aaaaggcctt	ccatgacgag	cattttggcc	ccttcttccg	aaccaaccag	atttttgtga	1260
cagctaagaa	caggtccagc	tacaagtacg	actccctgct	gctagggccc	aagaacttca	1320
gtgggatcct	atccctggac	ttgctgcagg	agctgttggg	gctacaggag	agacttcgac	1380
acctgcaagt	gtggtcccat	gaggcacagc	gcaacatctc	cctccaggac	atctgctatg	1440
ctccccctca	accgcataac	accagcctca	ctgactgctg	tgtcaacagc	ctccttcaat	1500
acttccagaa	caaccacaca	ctcctgctgc	tcacagccaa	ccagactctg	aatggccaga	1560
cctccctggg	ggactggaag	gaccatttcc	tctactgtgc	caatgccctt	ctcacgtaca	1620

aagatggcac	agccctggcc	ctgagctgca	tagctgacta	cggggcgcct	gtcttcccct	1680
tccttgctgt	tgggggctac	caagggacgg	actactcgga	ggcagaagcc	ctgatcataa	1740
ccttctctat	caataactac	cccgtgatg	atccccgcat	ggcccacgcc	aagctctggg	1800
aggaggcttt	cttgaaggaa	atgcaatcct	tccagagaag	cacagctgac	aagttccaga	1860
ttgcgttctc	agctgagcgt	tctctggagg	acgagatcaa	tcgcactacc	atccaggacc	1920
tgctgtctt	tgccatcagc	taccttatcg	tcttcctgta	catctccctg	gccctgggca	1980
gctactccag	atggagccga	gttgcggtgg	attccaaggc	tactctgggc	ctaggtgggg	2040
tggtgttgt	gctgggagca	gtcgtggctg	ccatgggctt	ctactcctac	ctgggtgtcc	2100
cctcctctct	ggcatcatt	caagtggtag	ctttcctggt	gctggctgtg	ggagctgaca	2160
acatcttcat	ctttgttctt	gagtaccaga	ggctgcctag	gatgcccggg	gagcagcgag	2220
aggctcacat	tggccgcacc	ctgggtagtg	tggccccag	catgctgctg	tgcagcctct	2280
ctgaggccat	ctgcttcttt	ctaggggccc	tgacctccat	gccagctgtg	aggacctttg	2340
ccttgacctc	tggcttagca	atcatctttg	acttcctgct	ccagatgaca	gcctttgtgg	2400
ccctgctctc	cctggatagc	aagaggcagg	aggcctctcg	ccccgacgtc	gtgtgctgct	2460
tttcaagccg	aaatctgccc	ccaccgaaac	aaaaagaagg	cctcttactt	tgcttcttcc	2520
gcaagatata	cactcccttc	ctgctgcaca	gattcatccg	ccctgttgtg	ctgctgctct	2580
ttctggctct	gtttggagca	aacctctact	taatgtgcaa	catcagcgtg	gggctggacc	2640
aggatctggc	tctgcccaag	gattcctacc	tgatagacta	cttcctcttt	ctgaaccggt	2700
acttggaagt	ggggcctcca	gtgtactttg	acaccacctc	aggctacaac	ttttccaccg	2760
aggcaggcat	gaacgccatt	tgctctagt	caggctgtga	gagcttctcc	ctaaccagga	2820
aaatccagta	tgccagtga	ttccctaata	agtcttatgt	ggctattgct	gcacctcct	2880
gggtagatga	cttcatcgac	tggctgacct	catcctcctc	ctgctgccgc	atttataccc	2940
gtggccccca	taaagatgag	ttctgtccct	caacggatac	ttccttcaac	tgtctcaaaa	3000
actgcatgaa	ccgcactctg	ggccccgtga	gaccacaac	agaacagttt	cataagtacc	3060
tgccctgggt	cctgaatgat	acgcccaca	tcagatgtct	taaagggggc	ctagcagcgt	3120
atagaacctc	tgtgaatttg	atctcagatg	gccagattat	agcctcccag	ttcatggcct	3180
accacaagcc	cttacggaac	tcacaggact	ttacagaagc	tctccgggca	tcccggttgc	3240
tagcagccaa	catcacagct	gaactacgga	aggtgcctgg	gacagatccc	aactttgagg	3300
tcttccctta	cacgatctcc	aatgtgttct	accagcaata	cctgacgggt	ctccctgagg	3360
gaatcttcac	tcttgctctc	tgcttctgtc	ccacctttgt	ggtctgttac	ctcctactgg	3420
gcctggacat	acgctcaggc	atcctcaacc	tgctctccat	cattatgatc	ctcgtggaca	3480

```

ccatcggcct catggctgtg tggggtatca gctacaatgc tgtgtccctc atcaaccttg 3540
tcacggcagc gggcatgtct gtggagttcg tgtcccacat taccgggtcc tttgctgtaa 3600
gcaccaagcc taccgggctg gagagagcca aagatgctac tatcttcatg ggcagtgcgg 3660
tgtttgctgg agtggccatg accaacttcc cgggcatacct catcctgggc tttgctcagg 3720
cccagcttat ccagattttc ttcttccgcc tcaacctcct gatcaccttg ctgggtctgc 3780
tacacggcct ggtcttcctg cccgttgctc tcagctatct ggggccagat gttaaccaag 3840
ctctgggtact ggaggagaaa ctagccactg aggagccat ggtctcagag ccttcttgcc 3900
cacagtaccc cttcccggt gatgcaaaca ccagtgcct atgttaacta aggttttaat 3960
ccagaattta tcctgaaat taatgctgct agcagctctc tgcccaaaag tgaccaaaag 4020
ttctaattga gtaggagctt gtccaggctc catggttctt gctgataagg ggccacgagg 4080
gtcttccctc tgggtgtttc caaggcctgg ggaaagtgt tccagaaaaa aattgctggc 4140
attcttgctc tgaggcagcc agcactggcc actttgttgt cataggtccc cgaggccatg 4200
atcagattac ctctctgta aagagaatat cttgagtatt gtatgggatg tatcacatgt 4260
caattaaaaa ggccatggcc tatggcttag gcaggaaata ggggtgtggaa catccaggag 4320
aagaaaggat tctgggataa aggacacttg ggaacgtgtg gcagtggtag ctgagcacag 4380
gtaattagcc atgtggcgaa atgtagatta atataaatgc atatctaagt tatgattcta 4440
gtctagctat atggccaagg tatttataaa t 4471

```

<210> 46

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 46

atgttaggtg agtctgaacc taccc

25

<210> 47

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 47
ggattgcatt tccttcaaga aagcc

25

<210> 48

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 48
tatggctctg ccctctgcaa tgctc

25

<210> 49

<211> 28

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 49
tcagcagcct ctgttcaca tacacttc

28

<210> 50

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 50
gttccacagg gtctgtggtg agttc

25

<210> 51

<211> 3996

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(3996)

<223> n is g or a or t or c

<400> 51	
atggcngarg cnggnytnmg nggntggytn ytntgggcny tnytnytnmg nytngcncar	60
wsngarcnt ayacnacnat hcaycarccn ggntaytgyg cnttytayga ygartgyggn	120
aaraayccng arytnwsngg nwsnytnatg acnytnwsna aygtnwsntg yytnwsnaay	180
acnccngcnm gnaarathac nggngaycay ytnathytny tncaraarat htgyccnmgn	240
ytntayacng gncnaayac ncargcntgy tgywsngcna arcarytngt nwsnytngar	300
gcnwsnytnw snathacnaa rgcnynytn acnmngtgyc cngcntgyws ngayaaytty	360
gtnaayytnc aytgycayaa yacntgywsn ccnaaycarw snytnttyat haaygtnacn	420
mgngtngcnc arytnngngc nggncarytn ccngcngtng tngcntayga rgcnttytay	480
carcaywsnt tygcngarca rwsntaygay wsntgywsnm gngtnmgngt nccngcngcn	540
gcnacnytn cngtnggnac natgtgyggn gtntayggnw sngcnytntg yaaygcncar	600
mgntggytna ayttycargg ngayacnggn aayggnytn cncnytnga yathacntty	660
cayytnytn arcnggnca rgcngtnggn wsnggnathc arccnytnaa ygarggngtn	720
gcnmngtgya aygarwsnca rggngaygay gtngcnacnt gywsntgyca rgaytgygcn	780
gcnwsntgy cngcnathgc nmgnccncar gcnytn gayw snacnttyta yytnngncar	840
atgccnggnw snytngtnyt nathathath ytntgywsng tnttygcngt ngtnacnath	900
ytnytngtng gnttymngt ngcncngcn mgngayaarw snaaratggt ngayccnaar	960
aarggnacnw snytnwsnga yaarytnwsn ttywsnacnc ayacnytnyt nggncartty	1020
ttycarggnt ggggnacntg ggtngcnwsn tggccnytna cnathytngt nytnwsngtn	1080

athccngtng	tngcnytn	ngcnggnytn	gtnttyacng	arytnacnac	ngayccngtn	1140
garytntggw	sngcncnaa	ywsncargcn	mgnwsngara	argcnttyca	ygaycarcay	1200
ttyggncnt	tyttymgnac	naaycargtn	athytnacng	cncnaaymg	nwsnwsntay	1260
mgntaygayw	snytnytnyt	nggncnaar	aayttywsng	gnathytnga	yytngayytn	1320
ytnytngary	tnytngaryt	ncargarmgn	ytnmgncayy	tncargtntg	gwsncngar	1380
gcncarmgna	ayathwsnyt	ncargayath	tgytaygcnc	cnytnaaycc	ngayaayaacn	1440
wsnytnayg	aytgytgyat	haaywsnytn	ytncartayt	tycaraayaa	ymgnacnytn	1500
ytnytnytna	cngcnaayca	racnytnatg	ggncaracnw	sncargtnga	ytggaargay	1560
cayttyytnt	aytgygcnaa	ygncncnytn	acnttyaarg	ayggnacngc	nytngcnytn	1620
wsntgyatgg	cngaytaygg	ngcncngtn	ttyccnttyy	tngcnathgg	nggntayaar	1680
ggnaargayt	aywsngargc	ngargcnytn	athatgacnt	tywsnytnaa	yaaytayccn	1740
gcnggngayc	cnmgnytn	ncargcnaar	ytntgggarg	argcnttyyt	ngargaratg	1800
mgngcnttyc	armgnmgnat	ggcnggnatg	ttycargtna	cnttyacngc	ngarmgnwsn	1860
ytnngargayg	arathaaymg	nacnacngcn	gargayytn	cnathhtygc	nacnwsntay	1920
athgtnatht	tyytnayayt	hwsnytnngcn	ytnggnwsnt	aywsnwsntg	gwsnmngngtn	1980
atggtngayw	snaargcnac	nytnngnytn	ggnggngtng	cngtngtnyt	nggngcngtn	2040
atggcngcna	tgggnttytt	ywsntayytn	ggcnathmgnw	snwsnytngt	nathytnncar	2100
gtngtnccnt	tyytngtnyt	nwsngtnngn	gcngayaaya	thttyathtt	ygtnytngar	2160
taycarmgny	tnccnmgnmg	nccngnggar	ccnmngarg	tncayathgg	nmngcnytn	2220
ggnmngtng	cncnwsnat	gytnytnytn	wsnytnwsng	argcnathgt	yttyttyytn	2280
ggngcnytna	cncnatgcc	ngcngtnmgn	acnttygcny	tnacnwsngg	nytnngcngtn	2340
athytngayt	tyytnytnca	ratgwsngcn	ttygtngcny	tnytnwsnyt	ngaywsnaar	2400
mgncargarg	cnwsnmgnyt	ngaygtntgy	tgytgygtna	arccncarga	rytnccncn	2460
ccnggncarg	gngarggnyt	nytnytnngn	ttyttycara	argcntaygc	nccnttyytn	2520
ytncaytgga	thacnmnggg	ngtngtnytn	ytnytnntty	tngcnytnnt	ygngtnwsn	2580
ytnaywsna	tgtgycaat	hwsngtnngn	ytngaycarg	arytngcnyt	nccnaargay	2640
wsntayytny	tngaytaytt	yytnnttyytn	aaymgntayt	tygargtngg	ngcncngtn	2700
tayttygtna	cnacnytnng	ntayaaytty	wsnwsngarg	cnggnatgaa	ygcnathgtg	2760
wsnwsngcng	gntgyaayaa	ytywsntty	acncaraara	thcartaygc	nacngartty	2820
ccngarcarw	sntayytngc	nathccngcn	wsnwsntggg	tngaygaytt	yathgaytgg	2880

ytnacnccnw	snwsntgytg	ymgnytnntay	athwsnggnc	cnaayaarga	yaarttytgy	2940
ccnwsnacng	tnaaywsnyt	naaytgyytn	aaraaytgya	tgwsnathac	natgggnwsn	3000
gtnmgnccnw	sngtngarca	rttycayaar	tayytnccnt	ggttyytnaa	ygaymgncn	3060
aayathaart	gyccnaargg	nggnytnngcn	gcntaywsna	cnwsngtnaa	yytnacnwsn	3120
gayggncarg	tnytngcnws	nmgnttyatg	gcntaycaya	arccnytnaa	raaywsncar	3180
gaytayacng	argcnytnmg	ngcngcnmgn	garytngcng	cnaayathac	ngcngayytn	3240
mgnaargtnc	cnggnacnga	yccngcntty	gargtnttyc	cntayacnat	hacnaaygtn	3300
ttytaygarc	artayytnac	nathytnccn	garggnytn	tyatgytnws	nytnngyytn	3360
gtncnccn	tygcnngtnws	ntgyytnytn	ytnggnytn	ayytnmgcnws	nggnytnytn	3420
aayytnytnw	snathgtnat	gathytnngtn	gayacngtn	gnttyatggc	nytnngggay	3480
athwsntaya	aygcnngtnws	nytnathaa	ytngtnwsng	cngtnngnat	gwsngtngar	3540
ttygtnwsnc	ayathacnm	nwsnttygcn	athwsnacna	arccnacntg	gytnngarmgn	3600
gcnaargarg	cnacnathws	natgggnwsn	gcngtnnttyg	cnggngtngc	natgacnaay	3660
ytncnnggna	thytnngtn	nggnytnngcn	aargcncary	tnathcarat	httyttytty	3720
mgnytnaayy	tnytnathac	nytnytnngn	ytnytncaay	gnytngtntt	yytnccngtn	3780
athytnwsnt	aygtnngncc	ngaygtnaay	ccngcnytn	cnytnngarca	raarmngcn	3840
gargargcng	tngcngcngt	natggtngcn	wsntgyccna	aycayccnws	nmgngtnwsn	3900
acngcngaya	ayathtaygt	naaycaywsn	ttygarggnw	snathaargg	ngcnggngcn	3960
athwsnaayt	tyytnccnaa	yaayggnmgn	cartty			3996